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A Study Investigating the Impact of a Brief Compassionate Mind Training on Burnout and Self-Criticism in Mental Healthcare Professionals

Volume 1 of 1

by

Emel Atuk

Supervised by Dr Margo Ononaiye, Dr Catherine Brignell and Dr Chris Irons

Thesis for the degree of Doctorate in Clinical Psychology

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Abstract

Faculty of Environmental and Life Sciences

School of Psychology

Thesis for the degree of Doctorate in Clinical Psychology

A Study Investigating the Impact of a Brief Compassionate Mind Training on Burnout and Self-Criticism in Mental Healthcare Professionals

by

Emel Atuk

The first chapter is a systematic review and meta-analysis which aimed to explore the relationship between self-compassion and compassion towards others among healthcare professionals. The review was conducted in line with PRISMA guidelines and a multi-base search identified 11 studies that met the inclusion criteria for the review. Overall, a small positive association was found between self-compassion and compassion towards others. This review offers preliminary support that it may be possible for interventions to target self-compassion to enhance compassionate care among healthcare professionals. Although, due to the cross-sectional nature of the included studies, conclusions regarding a causal relationship is limited. Future research directions are discussed.

The second chapter is an empirical paper which aimed to reduce burnout and self-criticism among mental healthcare professionals using Compassionate Mind Training (CMT; Gilbert, 2000) to increase the three flows of compassion (to self, towards others and from others). In total, 205 mental healthcare professionals participated in Part A of the
study, exploring baseline associations between the three flows of compassion, burnout and self-criticism. Cross-sectional analyses revealed significant negative associations between self-compassion and compassion from others and burnout, while compassion towards others negatively associated with client-related burnout only. Burnout positively associated with self-criticism, depression, anxiety and stress. Part B of the study consisted of a randomised controlled trial with 68 mental healthcare professionals. Analyses revealed openness to receiving compassion from others significantly increased and personal and work-related burnout significantly decreased post-intervention. These findings have important clinical implications for understanding and reducing burnout and self-criticism among mental healthcare professionals.

**Keywords:** Mental Healthcare Professionals, Burnout, Self-Criticism, Compassionate Mind Training, Flows of Compassion, Self-Compassion, Compassion towards Others, Compassion from Others.
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Research Thesis: Declaration of Authorship

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<th>Emel Atuk</th>
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<td>Title of thesis:</td>
<td>A Study Investigating the Impact of a Brief Compassionate Mind Training on Burnout and Self-Criticism in Mental HealthCare Professionals</td>
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I declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. None of this work has been published before submission.

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Abbreviations

ANCOVA Analysis of Covariance
ANOVA Analysis of variance
BCYCS Building and Cultivating Your Compassionate Self
CAAS Compassionate Attributes and Action Scales
CBI Copenhagen Burnout Inventory
CBT Cognitive Behaviour Therapy
CCP Compassion for a Close Person
CEAS Compassionate Engagement and Action Scales
CEAS-Cfo Compassion from Others subscale of the CEAS
CEAS-CtO Compassion towards Others subscale of the CEAS
CEAS-SC Self-Compassion subscale of the CEAS
CfO Compassion from Others
CFOS Compassion for Others Scale
CFT Compassion Focused Therapy
CFTS Compassion for the Self
CI Confidence Interval
CMA Comprehensive Meta-Analysis
CMT Compassionate Mind Training
C-RBO Client-Related Burnout subscale of the CBI
CS Compassion Scale
CtO Compassion towards Others
DASS-21 Depression Anxiety and Stress Scale
DASS-A Anxiety subscale of the DASS-21
DASS-D Depression subscale of the DASS-21
DASS-S Stress subscale of the DASS-21
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<tr>
<td>ERGO</td>
<td>Ethics and Research Governance Online</td>
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<tr>
<td>FSCRS</td>
<td>Forms of Self-Criticising Attacking and Self-Reassuring Scale</td>
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<td>HRV</td>
<td>Heart Rate Variability</td>
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<tr>
<td>IRAS</td>
<td>Integrated Research Approval System</td>
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<td>LLCI</td>
<td>Lower Limit Confidence Interval</td>
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<tr>
<td>M</td>
<td>Mindfulness</td>
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<tr>
<td>MANOVA</td>
<td>Multivariate analysis of variance</td>
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<tr>
<td>N.S.</td>
<td>Non-Significant</td>
</tr>
<tr>
<td>N/A</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>NHS</td>
<td>National Health Service</td>
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<tr>
<td>PBO</td>
<td>Personal Burnout subscale of the CBI</td>
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<tr>
<td>PFEVT</td>
<td>Postures &amp; Facial Expressions and Vocal Tones</td>
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<tr>
<td>PRISMA</td>
<td>Preferred Reporting Items for Systematic Reviews and Meta-Analysis</td>
</tr>
<tr>
<td>PROSPERO</td>
<td>International Prospective Register of Systematic Reviews</td>
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<tr>
<td>RCT</td>
<td>Randomised Controlled Trial</td>
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<td>S-C</td>
<td>Self-Compassion</td>
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<td>SC</td>
<td>Self-Criticism</td>
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<td>SCBCS</td>
<td>Santa Clara Brief Compassion Scale</td>
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<td>SCS</td>
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<td>SD</td>
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<td>Social Mentality Theory</td>
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<td>Sussex-Oxford Compassion Scale</td>
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<td>SOFI</td>
<td>Self-Other Four Immeasurables</td>
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<tr>
<td>SPSS</td>
<td>Statistical Package for the Social Sciences</td>
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<tr>
<td>SQAC</td>
<td>Standard Quality Assessment Criteria</td>
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<tr>
<td>SRB</td>
<td>Soothing Rhythm Breathing</td>
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<tr>
<td>TBO</td>
<td>Total Burnout</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>ULCI</td>
<td>Upper Limit Confidence Interval</td>
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<tr>
<td>US</td>
<td>United States</td>
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<tr>
<td>W-RBO</td>
<td>Work-Related Burnout subscale of the CBI</td>
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Chapter 1: An Exploration of the Relationship between Self-Compassion and Compassion towards Others among Healthcare Professionals: A Systematic Review and Meta-Analysis

“If you have no compassion for yourself then you are not able of developing compassion for others”

1.1 Introduction

A recent surge in research interest into the concept of compassion has led to the recognition of the importance of both self-compassion and compassion towards others within healthcare settings (e.g., American Medical Association, 2001; Department of Health, 2013). This comes following the Francis Report detailing dehumanising treatment of patients, igniting the drive to enhance compassionate care as a patient right (Francis, 2013). Gilbert (2014) theorised that there are three flows to compassion, namely the compassion we can feel towards others, the compassion we can feel from others and the compassion we can direct towards ourselves. Currently, there is disparity among the literature regarding the strength of the relationship between the flows, or whether a relationship exists. However, there is widely held belief that self-compassion may be able to enhance compassionate care among healthcare professionals (Barratt, 2017; Finlay-Jones, Xie, Huang, Ma, & Guo, 2018; Mills, Wand, & Fraser, 2015). Consequently, the current review aims to synthesise the existing literature and evidence-base reporting on the relationship between self-compassion and compassion towards others among healthcare professionals. It is important to note that, based on the authors’ knowledge, there is currently no research measuring the third flow, compassion from others, in relation to the other flows of compassion with this population, therefore this flow has not been specifically targeted in this review. With this in mind, the next section will introduce the
dominant ideas underpinning the concept of compassion, with an emphasis on the
theorised three flows of compassion (Gilbert, 2014), followed by an overview of
compassion in healthcare.

1.1.1 Defining Compassion

For over 3,000 years, compassion has been considered to be one of the most
distinctive and important qualities of the human mind (Gilbert, 2010b). At the centre of
various religious and spiritual belief systems (Dalai Lama, 1995; Leighton, 2003; Strauss
et al., 2016), compassion has long been considered essential for happiness and wellbeing
within Eastern cultures (Davidson & Harrington, 2001), and has also gained increasing
interest within the Western world (Irons, 2014). Compassion derives from the Latin word
‘compati’, meaning “to suffer with” (Gilbert, 2010a). With its roots originating from
Buddhist traditions, the Dalai Lama (1995) defines compassion as a non-judgemental open
heartedness towards the suffering of one’s self and others, while having a strong desire to
alleviate suffering in all things living. From the Buddhist perspective, compassion is
considered to be a state or an emotion, which alongside wisdom, can promote emotional
healing (Makransky, 2012).

Compassion has been associated with emotions, competencies (abilities) and
motives to be helpful, understanding, supportive and kind to others (Davidson &
Harrington, 2002). A recent review of definitions of compassion by Strauss et al. (2016),
concluded a broad consensus that compassion consists of five elements including;
understanding the universality of human suffering, recognising suffering, feeling for the
individual suffering, tolerating uncomfortable feelings, and having the motivation to
alleviate suffering. However, seeking to validate Strauss et al.’s (2016) definition of
compassion, Gu, Cavanagh, Baer and Strauss (2017) conducted a factor analysis by
pooling together items from existing compassion scales. They concluded that the
“tolerating uncomfortable feelings” factor may not actually be a core element of compassion and suggested that further research was required. Additionally, in line with the varying definitions of compassion, there is also some debate within the literature about whether compassion is actually an emotion or an affective state that motivates compassionate behaviour (Strauss et al., 2016). For example, Goetz, Keltner and Simon Thomas (2010) considers compassion as the feeling that arises when one witnesses another suffering, which then motivates one’s desire to help. While Gilbert (2010) conceptualises compassion as an evolved motivational system, designed to form attachment bonds and affiliative behaviours for group survival, which subsequently leads an individual to feeling an emotion in response to another’s suffering.

1.1.2 Compassion and Social Mentality Theory

A forerunner in the field of compassion and prominent contributor to compassion research with good theoretical basis, Paul Gilbert (2014) defines compassion as “a sensitivity to suffering in self and others, with a commitment to try to alleviate and prevent it” (p. 19). Grounded in evolutionary psychology, attachment theory (see Bowlby, 1969; 1982) and neurophysiology (e.g. Porges, 2007), whilst also drawing upon several Buddhist teachings (i.e., the sensitivity and motivation to relieve suffering), Gilbert’s (1989, 2000, 2014) Social Mentality Theory (SMT) posits that compassion is part of an evolved motivational system. According to Gilbert, there are two separate functional psychological processes to compassion. The first, linked to motivated attention and engagement with suffering to make sense of it, and the second relating to obtaining the wisdom and abilities to alleviate and prevent suffering (Gilbert, 2014; Gilbert et al., 2017). From this perspective, compassion is captured by six fundamental competencies that relate to sensitivity, empathy, sympathy, motivation, caring and distress tolerance (Gilbert, 2014).
SMT was developed to encompass a way of thinking about how different parts of
the mind are activated in certain patterns to create different types of relationships or roles
(Gilbert 1989, 1995, 2005). Humans and animals are theorised to have innate motivational
systems, which over time, evolved certain competences compatible with the intention(s) of
that motivational system (Gilbert, 2014). For example, to be able to eat, an animal must
have the competency to be able to both detect and discriminate between edible food and
poisonous food, to meet this motive (Gilbert, 2014). SMT theorises that a number of these
functionally specific motivational systems, referred to as ‘social mentalities’, evolved to
enable co-creation of seeking out and forming specific types of relationships (e.g., tribal,
sexual, caring of-care for, dominant-subordinate etc.) to pursue evolved biosocial goals and
motives (e.g., looking after one’s offspring, forming alliances and seeking out a sexual
partner) in one’s life (Gilbert, 2010). Gilbert (2000) defined these social mentalities as
internal motivational systems that “generate patterns of cognition, affect and behaviour...
that allow for the enactment of social roles” (p. 120) which support the ability to overcome
a variety of social challenges essential for survival, such as mating and care-seeking, care-
giving and alliance formation (Gilbert, 2005).

Social mentalities are considered to appropriately orient an individual’s cognitions,
behaviour and affect to develop certain social roles with others (e.g., dominating a rival
versus seeking affiliation with a friend) and guide how the individual interprets the others’
social cues, such as perceiving the other as behaving in a competitive versus friendly way
towards them (Gilbert, 2014; Hermanto & Zuroff, 2016). Therefore, an individual
motivated to care for another, is in a caring mentality, wherein their motive is directed
towards relieving the other’s distress and their attention and behaviour are orientated
towards the other’s distress in order to find ways to provide support to meet their motive to
care (Gilbert, 2010; Liotti & Gilbert, 2011).
SMT posits that compassion is a social mentality, emerging from the motivation to care for others (Gilbert, 2009). This motivation is underpinned by various competencies of the care-seeking and care-giving mentalities, which evolved to maximise survival for mammalian offspring as these mentalities allowed the attachment figure to notice and respond to the infant’s signals of distress and soothe them (Gilbert, 2009). Compassion is distinguished from straight mammalian caring, due to the fact that humans have the capacity to use their social intelligence and knowing awareness to direct their caring behaviour (Gilbert, 2017).

As social mentalities refer to social motives which involve creating mutual reciprocal roles, compassion is considered a motivated reciprocal interaction process, wherein the provider of compassion considers the impact of their care-giving on the other and the receiver of compassion considers the helpfulness of the provider’s care (Gilbert, 2019). Furthermore, Gilbert (1989, 2014) maintains social mentalities are not only activated in relationships with others, but can also be activated in relations with oneself. Consequently, as a social mentality, compassion from this perspective is theorised to flow in three directions; compassion to the self, towards others, and from others (Gilbert, 2014).

1.1.3 Compassion Towards and From Others

The care-giving and care-seeking mentalities are theorised to underlie ‘compassion towards others’ and ‘compassion from others’, respectively (Hermanto & Zuroff, 2016). Compassion for others is considered to have evolved as part of the caregiving response to ensure the survival of vulnerable offspring, and supporting cooperative alliances (Lopez, Sanderman, Ranchor, & Schroevers, 2018). Equally, Gilbert (2010) highlights that when in a care-seeking mentality, input (i.e. compassion from others) is sought from others which could help one grow and relieve distress. This means that attention is turned towards others that may be able to help, and distress or needs are signalled for them to potentially be met.
The competencies for care-seeking and care-giving have been explored within the context of attachment theory (see Bowlby, 1969; 1982), which posits that humans have innate behavioural systems of attachment and caregiving. Bowlby (1969; 1982) argued that the attachment system functions to protect individuals from danger through ensuring proximity to caring for others is maintained. This is achieved by being able to express distress and also being responsive to signals of care from others (care-seeking). The caregiving system functions to offer support and protection to others in need, involving competencies of assessing the others’ needs, being responsive via caring behaviour and empathic understanding (Bowlby 1969, 1982; Hermanto & Zuroff, 2016). Gilbert’s (2000, 2005) care-seeking and care-giving social mentalities, map onto Bowlby’s attachment and caregiving theories, respectively (Hermanto & Zuroff, 2016).

1.1.4 Compassion to Self

Self-compassion has arguably received the most attention compared to the other flows of compassion, and in recent years, there has been a significant increase of interest across psychological research to enhance compassion to the self through the concept of “self-compassion” (Strauss et al., 2016). Increased levels of self-compassion has been associated with a number of benefits for one’s mental health and well-being (Boellinghaus, Jones & Hutton, 2014; Gilbert, 2009, 2010; Hutcherson, Seppala & Gross, 2008; Lutz, Brefczynski-Lewis, Johnstone & Davidson, 2008; Neff, Hsieh & Dejitterat, 2005). Furthermore, individuals with greater self-compassionate qualities are found to be less judgemental of themselves and therefore, less likely to experience mental health difficulties (Neff, Kirkpatrick, & Rude, 2007). However, despite the vast evidence base looking at this construct, there is still no one established conceptualisation of self-compassion (Strauss et al., 2016). There are, however, two dominant perspectives, which are Gilbert’s SMT perspective and also a widely used definition by Neff (2003) which has roots in a Buddhist perspective.
SMT theorises that it is the combination of the care-seeking and care-giving social mentalities that underlie self-compassion and self-reassurance. This suggests that people are able to relate to themselves through the same aforementioned systems originally evolved for relating to others, and that self-compassion is a type of intrapersonal relation, wherein the interpersonal care-giving and care-seeking mentalities are activated. For example, Gilbert (2005) argues that just as the care-giving and care-seeking mentalities are activated in relation to others, they can also be activated when related to oneself. Self-compassion is considered a way of self-to-self relating, wherein the care-seeking mentality gives signs of distress and need to the self, and the care-giving mentality reacts with compassionate emotion and thoughts directed inward (Gilbert, 2005; Hermanto & Zuroff, 2016).

In contrast, Neff (2003) defines self-compassion as compassion directed towards the self with three principal elements with bipolar constructs within each element; self-kindness (being non-judgemental and kind towards oneself rather than self-critical), mindfulness (being open and mindful of one’s own suffering rather than over-identifying with it, like ‘distress tolerance’) and common humanity (awareness of the common experiences of suffering across humanity, as opposed to suffering being isolating). From Neff’s perspective, these elements combined are thought to create a self-compassionate mind-set (Germer & Neff, 2013).

However, these two dominant perspectives are not without their limitations. Gilbert’s model and theory has been criticised for its oversimplification, although Gilbert (2005) maintains that this simplification increases the model’s accessibility. In support, it has been argued that Gilbert’s (2005, 2009, 2014) model of emotion regulation systems offers a strong theoretical framework to support understanding of the development of well-being (Kelly, Zuroff, Leybman, & Gilbert, 2012), as well as mental health difficulties (Gilbert & Irons, 2005; Gilbert & Procter, 2006). Furthermore, Neff’s (2003) model has
been critiqued for including negative items (‘self-judgement’, ‘isolation’, and ‘over-identification’) alongside positive items (‘self-kindness’, ‘common humanity’ and ‘mindfulness’) as part of reflecting core self-compassionate features (Mauris et al., 2018). These negative items are considered to inflate the negative associations that are commonly found between self-compassion and psychopathology across research (Mauris, et al., 2018). Although, Neff (2016a) suggests that self-compassion is a state of mind that includes both compassionate and uncompassionate self-responding and highlights the importance of including both positive and negative items. Consequently, in addition to the aforementioned debate within the literature regarding the conceptualisation of compassion, although there are two dominant perspectives, they are not without critique, which highlights the need for further research into compassion.

1.1.5 Interactions between the Flows of Compassion

The last decade has seen a rapid upsurge in the interest of the benefits of cultivating compassion, specifically self-compassion and compassion towards others (e.g., Fehr, Sprecher, & Underwood, 2009; Lopez et al., 2018). However, there remains limited understanding of the similarities, differences and the extent of the relationship between these constructs (Lopez et al., 2018). As previously stated, according to the SMT, when one is self-compassionate, both the care-seeking and care-giving mentalities are activated (Hermanto & Zuroff, 2016), demonstrating that the relationship between the three flows of compassion is considered an interactive process (see Figure 1). Furthermore, according to Buddhist thinking, self-compassion is essential to be able to show true compassion towards others, and separating these two flows would mean drawing a false distinction between others and the self (Strauss et al., 2016).

However, there is some debate regarding whether self-compassion and compassion for others are part of the same overarching concept, with mixed findings reported among
research looking at the associations between these two flows (Strauss et al., 2016). While some studies among university students and the general population report a weak to no relationship (Lopez et al., 2018; Neff & Pommier, 2013), others have reported a moderate relationship between the two flows of compassion (Gilbert et al., 2017). Lopez et al. (2018) also highlighted that while self-compassion and compassion for others are assumed to be closely related concepts, they have often been researched separately, and little is known about their association. Consequently, further research is required in this area, not only among the student and general population, but also among healthcare professionals that aim to provide compassionate care.

**The interactive flow of compassion**

![The interactive flow of compassion](image)

*Figure 1. The interactive flows of compassion (retrieved from The Compassionate Mind Foundation).*

1.1.6 Compassion in Healthcare Professionals

Of specific interest to this review, is the association between self-compassion and compassion *towards* others among healthcare professionals. Gilbert (2014) argued that as social mentalities are related to social roles, they are fundamental to our social identities.
Across the journey of students becoming healthcare professionals, a range of attitudes, beliefs and understandings about their role begin to form, aiding the formation of their ‘professional identity’, which can be framed within the context of their social identity (Adams, Hean, Sturgis, & MacLeod Clark, 2006; Lingard, Reznick, DeVito, & Espin, 2002). The ability to be compassionate towards others and oneself is arguably essential in clinical work among healthcare professionals (Beaumont & Hollins Martin, 2016; Boellinghaus, Jones, & Hutton, 2014; Gilbert, 2005). Compassionate care is considered to be helpful with supporting both stronger therapeutic client-therapist relationships and offers some protection against burnout (Boellinghaus et al., 2014), and also underpins the National Health Service (NHS) values (Department of Health, 2015). Interestingly, Barratt (2017) highlighted the importance of finding ways to develop and enhance compassionate care amongst healthcare professionals. This type of work is known to involve challenging working environments, as well as excessive workloads, lack of support and inadequate staffing (Johnson et al., 2018) and increasing pressures to meet outcomes, which can inadvertently lead to patients being depersonalised during their care (Ballat & Campling, 2011; Barratt, 2017).

Self-compassion is not only considered to play a crucial mediating role for healthcare professionals maintaining their own mental health (Ringenbach, 2009), but also for the care of others (Barratt, 2017; Finlay-Jones et al., 2018; Mills, et al., 2015). This adds support for the notion that it is important to explore these associations to enhance compassionate care to self and others within this group of professionals. However, as mentioned above, there appears to be disparity among the literature regarding this relationship (e.g., Gilbert et al., 2017; Lopez et al., 2018; Neff & Pommier, 2013), and more specifically the relationship between the flows among healthcare professionals is yet to be systematically reviewed.
1.1.7 Aims of the Current Review

The current review aims to draw together both published and grey literature, and synthesise and critically appraise the evidence looking at the relationship between self-compassion and compassion towards others among healthcare professionals.

1.1.8 Research Question

What is the relationship between self-compassion and compassion towards others among healthcare professionals?

1.2 Method

1.2.1 Protocol and Registration

The conduct and reporting of the current review adheres to the general principles recommended by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA; Moher, Liberati, Tetzlaff, & Altman, 2009). The review protocol was registered on the international prospective register of systematic reviews (PROSPERO) prior to the commencement of data extraction. This can be accessed via (https://www.crd.york.ac.uk/PROSPERO/; registration number: CRD42020163102).

1.2.2 Information Sources and Search Strategy

Initial scoping searches were performed at the start of the project, prior to the finalisation of the review question and review protocol. Scoping searches were conducted via Google Scholar, PROSPERO and the Cochrane Library to consider the current literature, any existing reviews or protocols, and to inform alternative search terms to be included in the final search strategy.
A systematic literature search was then conducted through the following electronic bibliographic databases to identify relevant published studies for the current review: CINAHL Plus with Full Text, MEDLINE, PsycINFO, PsycARTICLES and Web of Science (all accessed via EBSCO) and EMBASE (accessed via OVID). The following database sources were also systematically searched to identify any relevant grey (unpublished) literature: ProQuest for Dissertations and Theses, the British Library and the Cochrane Library. All searches were conducted on 16th and 17th December 2019.

The following search strategy, informed by the key terms in the research question (‘self-compassion’ and ‘compassion for others’) and early scoping searches, is an example that was used for some databases: (Self N1 compassion*) AND (“compassion for other*” OR “compassion* to other*” OR “compassion* toward other*” OR “compassion* care” OR “other-focused concern” OR “orientation of compassion”); see Table A1 in Appendix A for details of the search strategy used for each individual database. A librarian was consulted on the use of Boolean operators, truncation and proximity searching, to refine the search strategy. No limiters (i.e. field, language or date restrictions) were applied to the search strategy, to not miss any relevant studies.

1.2.3 Eligibility Criteria

All studies were screened based on predetermined inclusion and exclusion criteria (see Table 1). Studies were eligible if they were quantitative and original empirical studies with healthcare professionals as participants (either qualified or unqualified). Studies were included if they were published in English, included a measure(s) of self-compassion and compassion towards others and conducted analyses of associations between self-compassion and compassion towards others.
Table 1

*Inclusion and Exclusion Criteria for Systematic Review*

<table>
<thead>
<tr>
<th>Inclusion Criteria</th>
<th>Exclusion Criteria</th>
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<tbody>
<tr>
<td>1. Participants aged 18+ years</td>
<td>1. Participants aged -18 years</td>
</tr>
<tr>
<td>2. Healthcare professionals (both qualified and unqualified)</td>
<td>2. Not healthcare professionals</td>
</tr>
<tr>
<td>3. Research conducted anywhere in the world and written in English</td>
<td>3. Research not written in English</td>
</tr>
<tr>
<td>4. Original empirical studies</td>
<td>4. Not original empirical study (i.e. books, systematic reviews/meta-analyses, essays, commentaries etc.)</td>
</tr>
<tr>
<td>5. All types of quantitative studies (e.g. cross-sectional, correlational, randomised control trials (RCT’s), non-RCT’s, single case studies and/or mixed methods)</td>
<td>5. Qualitative studies</td>
</tr>
<tr>
<td>6. Includes validated measure(s) of both self-compassion and compassion for others</td>
<td>6. Does not include validated measure(s) of both self-compassion and compassion for others</td>
</tr>
<tr>
<td>7. Findings available</td>
<td>7. Findings not available</td>
</tr>
<tr>
<td>8. Includes quantitative analyses of the relationship between the two variables.</td>
<td>8. Does not include quantitative analyses of the relationship between the two variables</td>
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<td></td>
<td>9. Not related to research question – i.e. Compassion not reported/cited in title/abstract</td>
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<tr>
<td></td>
<td>10. Research looking at similar concepts (i.e. kindness, prosocial behaviour, empathy, compassion satisfaction and/or compassion fatigue) without measures of self-compassion and compassion for others included</td>
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</table>
1.2.4 Screening and Study Selection

The PRISMA guidelines (Moher et al., 2009) informed the screening and selection of studies included in the current review; see Figure 2 for the PRISMA flow diagram of the study selection process. In total, 2102 studies were identified following the database searches and all were exported to the reference management software, EndNote. Following removal of duplicates (both automatically and manually), 1723 studies remained which were screened against the inclusion and exclusion criteria using titles and abstracts. This screening resulted in 1674 studies that were not deemed eligible for the review. The next step involved the remaining 49 studies deemed as eligible for full-text screening, although it was not possible to obtain the full-text version of three studies (Gurfein, 2017; Strauss, 2014; Taylor, 2019). Of the remaining studies, 35 were excluded from the review; one study was a duplicate, one was not written in English, one was qualitative, nine were not empirical studies, 13 did not have measures for both variables, and 10 did not conduct analyses of associations between the measures of interest (see Table B1 in Appendix B for a list of reasons for excluded studies at full-text screening stage).

This left 11 studies that met the full inclusion criteria and a list of these studies was sent to an expert in the field (Dr Chris Irons, Balanced Minds) to identify any missed eligible published and/or unpublished data; none were identified. The full reference lists of the 11 eligible studies were also hand-searched and 24 titles were deemed possibly relevant and read at abstract level; all 24 studies were excluded at this stage as they were either duplicates of the studies already identified or did not meet the full inclusion criteria. Due to the large volume of studies identified in the initial search and time constraints, a second reviewer screened a randomly selected 10% of the studies at title and abstract stage (as recommended by Boland, Cherry, & Dickson, 2017). The second reviewer also screened all studies at full-text stage against the inclusion and exclusion criteria; there were no cases of disagreement between the two reviewers.
1.2.5 Data Extraction

Key data was extracted from each study and is displayed in Table 2. The data extraction table includes the study design and characteristics, setting/context, participant characteristics, measures used to measure the flows of compassion, interventions (if applicable), analyses conducted and a summary of main findings relevant to the current research question for each study included in the review. Due to time constraints, a second reviewer extracted data for four of the studies and this was cross-checked.
Figure 2. PRISMA flow diagram (Liberati et al., 2009; Moher et al., 2009).
1.2.6 Quality Assessment for Risk of Bias

In line with PRISMA (Liberati et al., 2009) guidelines, the methodological quality of all included studies was assessed for risk of bias, after data was extracted, using the Standard Quality Assessment Criteria for Evaluating Primary Research from a Variety of Fields (SQAC; Kmet, Lee, & Cook, 2004). This tool was selected due to the variety in study designs and analyses conducted in the included studies. This quality assessment tool consists of 14 questions covering a range of areas including the study design, participant recruitment, statistical power, suitability of analyses conducted, reporting of both significant and non-significant results, and the validity of conclusions made. Each question is rated based on the degree to which the question criteria is met (‘yes’ = 2, ‘partial’ = 1, ‘no’ = 0); questions not applicable to the study design are marked as ‘N/A’ and are excluded from the total score calculation. To calculate the total score for each study, the ‘yes’ and ‘partial’ scores are added up; the maximum total score depends on the number of applicable questions to the study design (i.e., if all 14 questions were applicable, the maximum possible total score would be 28, while if only 10 questions were applicable then the total possible score would be 20). An overall summary quality score between 0 and 1 was then calculated by dividing the total score for each study by the total possible score; with higher scores indicating a higher methodological standard. Each quality rating score was evaluated against categorised cut-off points determined by Kmet et al. (2004), with scores indicating: 0.80> ‘strong’, 0.70-0.79 ‘good’, 0.50-0.69 ‘adequate’, and 0.50< ‘limited’ methodological quality.

All studies were included in the review regardless of their quality rating due to the limited research in this area and the implications of this are considered in the discussion. A second reviewer also independently assessed the quality of all included studies to reduce potential bias, due to the subjective nature of the assessment, and scores were compared and discussed. The inter-rater reliability was calculated via Cohen’s kappa, and there was
‘almost perfect’ agreement between the two reviewers’ scores ($\kappa = 0.885$). The quality assessment score given for each individual study is presented in Table 2 (see Appendix C for more detailed quality assessment criteria and breakdown of scoring for each included study).

To account for any risk of publication bias that may influence the cumulative evidence, both published ($n = 9$) and (grey) unpublished ($n = 2$) studies were included.

### 1.2.7 Methods of Data Synthesis and Analysis

All studies which met the review inclusion criteria, regardless of the risk of bias assessment results, were included in a meta-analysis; the poorest study had a score of 0.75 which is considered ‘good’ methodological quality. In addition, study results were narratively synthesised with consideration of the impact of key characteristics of the studies, limitations of the studies and their implications for the size, direction, or presence of an effect (if reported).

As all studies reported a statistical association between self-compassion and compassion towards others, bivariate associations (Pearson’s correlation coefficient $r$) between self-compassion and compassion towards others were extracted and aggregated via meta-analysis. A single effect size was taken from each study. The software Comprehensive Meta-Analysis (CMA, Version 3, Borenstein, Hedges, Higgins, & Rothstein, 2013) was used to conduct the meta-analysis, and a random-effects model was adopted to estimate the mean of the distribution of effects across the studies (Borenstein, Hedges, Higgins, & Rothstein, 2009). Unlike a fixed-effect model, a random effects model does not assume that all included studies are functionally equivalent and accounts for differences across studies that may have impacted the different effect sizes reported (Borenstein et al., 2009); this accommodated the expected heterogeneity across the included studies such as the sample and different measures used.
1.3 Results

1.3.1 Study characteristics

All of the 11 studies included in the review were conducted between 2012 and 2019. Nine were peer-reviewed published studies (Beaumont, Durkin, Hollins Martin, & Carson, 2016a; Beaumont, Durkin, Hollins Martin, & Carson, 2016b; Durkin, Beaumont, Hollins Martin, & Carson, 2016; Fulton, 2018; Gu, Baer, Cavanagh, Kuyken, & Strauss, 2019; Henshall, Alexander, Molyneux, Gardiner, & McLellan, 2018; Mills, Wand, & Fraser, 2018; Roxas, David, & Aruta, 2019; Yip, Mak, Chio, & Law, 2017) and two were unpublished theses and dissertations (Fulton, 2012; Masjedi, 2018). One study consisted of three small studies using the same methodology and included qualitative data, of which the quantitative analyses from only the second study was relevant to the current review question and are reported on (Henshall et al., 2018). One study included a pilot study within its appendices (Fulton, 2012). This pilot study was considered as part of the main study in this review, although the data from the pilot study was considered as an independent sample in the meta-analysis conducted, as a separate effect size has been reported.

All 11 studies used self-report questionnaires to measure self-compassion and compassion towards others. Additionally, 10 studies were cross-sectional in design and one study had an experimental design (Masjedi, 2018). All studies provided cross-sectional findings on the relationship between self-compassion and compassion towards others and conducted correlational analyses. Five studies were conducted in the United Kingdom (Beaumont et al., 2016a, 2016b; Durkin et al., 2016; Gu et al., 2019; Henshall et al., 2018), three in the United States (US; Fulton, 2012, 2018; Masjedi, 2018), one in Australia (Mills et al., 2018), one in the Philippines (Roxas et al., 2019), and one conducted in Hong Kong (Yip et al., 2017). The setting(s) of recruitment for each study also varied, with six studies
recruiting from across college and university programmes (Beaumont et al., 2016a, 2016b; Durkin et al., 2016; Fulton, 2012, 2018; Roxas et al., 2019), three across healthcare trusts/organisations (Gu et al., 2019; Henshall et al., 2018; Masjedi, 2018), one from an online national service directory (Mills et al., 2018) and one study recruited from a variety of settings, including, hospitals, non-government organisations, social welfare and health departments, counselling centres, universities, correctional services and private practices (Yip et al., 2017).

The total sample size across the 11 studies, including data from the pilot study in Fulton (2012), was 2815 participants. The number of participants in each study varied between 37 and 1319 participants. Of all participants, 2124 were described as qualified professionals and 456 as unqualified healthcare professionals. This is with the exception of one study, with a sample of 231, who described their participants as a mixture of qualified and unqualified healthcare professionals and did not distinguish between them (Roxas et al., 2019). The qualified healthcare professionals across the studies consisted of counselling professionals, psychologists, psychotherapists, palliative care nurses and doctors, community nurses, physiotherapists, occupational therapists, speech and language therapists, healthcare support workers, and administrative and clerical roles. The unqualified healthcare professionals consisted of trainee/intern/student counsellors, cognitive behavioural psychotherapists, psychology trainees and midwives.

All but one study (Beaumont et al., 2016a) reported numbers on gender and age distribution. Across the 10 studies reporting this data, there were 2147 female and 607 male participants, and the age of participants ranged between 18 – 74 years old ($M = 36.12$, $SD = 7.41$). Only four studies reported on ethnicity (Fulton, 2012, 2018; Gu et al., 2019; Masjedi, 2018). Each of these studies provided a breakdown of ethnicity as Caucasian/White or European/White, African American/Black, Hispanic/Latina/o, Asian American, Biracial/Multiracial, Native American, Middle Eastern/Semitic, Native
Hawaiian Pacific Islander or as Other; with the majority of participants described as Caucasian/White. Four studies reported on overall participant response rates (Fulton, 2012, 2016; Henshall et al., 2018, Mills et al., 2018), which ranged between 60% and 87.9%. One study reported analysing data from only 25.5% of their initial sample due to incomplete measures (Masjedi, 2018).

1.3.2 Measures

A variety of self-report measures were employed across the included studies for both self-compassion and compassion towards others.

1.3.2.1 Self-Compassion Measures

1.3.2.1.1 Self-Compassion Scale (SCS)

The most common self-compassion measure was the Self-Compassion Scale (SCS; Neff, 2003), used by six studies (Beaumont et al., 2016a, 2016b; Durkin et al., 2016; Masjedi, 2018; Roxas et al., 2019; Yip et al., 2017). The SCS is a 26-item measure with six subscales of bipolar constructs measuring an individual’s overall level of self-compassion, ‘self-kindness’ versus ‘self-judgement’, ‘mindfulness’ versus ‘over-identification’, and ‘common humanity’ versus ‘isolation’; reflecting positive versus negative elements of self-compassion respectively. The SCS is considered to have good psychometric properties for test-retest reliability ($\alpha = 0.93$) and internal reliability ($\alpha = 0.92$; Neff, 2003; Neff et al., 2007). However, there has been some controversy over the SCS’s construct as a one-factor structure and measurement of self-compassion, particularly regarding combining the sum of all the positive and negative items as a single measure of self-compassion (Costa, Maroco, Pinto-Gouveia, Ferreira, & Castilho, 2015; Lopez et al., 2015; Muris & Petrocchi, 2016), as an individual can score either high or low on the positive and negative items and still achieve the same overall total self-compassion score. Researchers have instead suggested the use of a two-factor structure, with ‘self-compassion’ (calculated via the
positive items) versus ‘self-criticism/self-coldness’ (calculated via the negative items) and this has been supported by Neff also (Lopez et al., 2015; Muris, 2015). However, Neff (2016b) has stated a two-factor structure would not be theoretically coherent due to both the positive and negative items needing to be considered to fully represent self-compassion; consequently caution must be taken when interpreting the findings of these studies.

Among the six included studies using this measure, there were discrepancies regarding how the SCS was scored to obtain the measure of self-compassion. Masjedi (2018) summed the scores across subscales to obtain a total self-compassion score, while Roxas et al. (2019) reverse scored the negative items and combined all the subscale scores to form a total self-compassion score. Yip et al. (2017) only combined the sum of the three positive subscales to form a “self-warmth” score for self-compassion. There is a lack of clarity for how Beaumont et al. (2016a, b) and Durkin et al. (2016) obtained their total self-compassion score. Beaumont et al.’s studies also reported analyses relating to ‘high’ versus ‘low’ self-compassion, although how they scored these is not stated. Beaumont et al. and Durkin et al. also specifically included one of the three bipolar constructs in the SCS (‘self-kindness’ versus ‘self-judgement’) within their analyses.

1.3.2.1.2 Self-Compassion Scale-Short Form (SCS-SF)

The short-form version of the Self-Compassion Scale (SCS-SF; Raes, Pommier, Neff, & Van Gucht, 2011) was used by three studies (Gu et al., 2019; Henshall, 2018; Mills et al., 2018). The SCS-SF is a 12-item measure by Raes et al. (2011) based on the aforementioned SCS and has the same factor structure as the SCS with six positive versus negative subscales (Neff, 2003). The SCS-SF is considered to have good psychometric properties for test-retest reliability ($\alpha = 0.85$) and internal reliability ($\alpha = 0.87$) when calculating a total self-compassion score (Raes et al., 2011). All studies calculated a total mean score for self-compassion. While Henshall et al. (2018) and Mills et al. (2018)
reverse scored negative items and summed this with the positive items to calculate an overall mean score, Gu et al. (2019) did not report how they calculated their overall score.

1.3.2.1.3 Self-Other Four Immeasurables (SOFI) Positive-Self Subscale

Two studies (Fulton, 2016, 2018) used the Self-Other Four Immeasurables (SOFI) Positive-Self Subscale (Kraus & Sears, 2009) to measure self-compassion. The SOFI is a 16-item measure with four subscales (‘positive qualities toward self’, ‘positive qualities toward others’, ‘negative qualities toward self’ and ‘negative qualities toward others’) developed to measure compassion towards the self and others based on loving-kindness, compassion, joy and equanimity from Buddhist teaching (Kraus & Sears, 2009). Both studies by Fulton employed only the ‘positive qualities toward self’ subscale as their measure of self-compassion. This subscale is found to have high internal consistency (α = 0.86; Kraus & Sears, 2009).

1.3.2.1.4 Sussex-Oxford Compassion for the Self Scale (SOCS-S)

Gu et al.’s (2019) study was focused on the development and psychometric properties the Sussex-Oxford Compassion Scale (SOCS). They used the Sussex-Oxford Compassion for the Self (SOCS-S) as their measure of self-compassion, and employed the SCS-FS (Raes et al., 2011) alongside the SOCS-S. The SOCS was developed to enable two parallel self-report measures of compassion, Sussex-Oxford Compassion for the Self-Scale (SOCS-S) and Sussex-Oxford Compassion for Others Scale (SOCS-O) based on Strauss et al.’s (2016) five-element definition of compassion; understanding the universality of suffering, recognising suffering, feeling moved by suffering, tolerating the uncomfortable feelings aroused in response to suffering, and the motivation to alleviate suffering. The SOCS-S is a 20-item measure with five subscales and a total combined subscale score, considered to have adequate internal consistency (α = 0.91 - 0.93 for the total SOCS-S scale (Gu et al., 2019).
1.3.2.2 Compassion towards Others Measures

1.3.2.2.1 Compassion Scale (CS)

Six studies (Beaumont et al., 2016 a, b; Durkin et al., 2016; Henshall et al., 2018; Roxas et al., 2019; Yip et al., 217) used the Compassion Scale (CS; Pommier, 2010), also referred to as the Compassion for Others Scale (CFOS; Pommier, 2011). The CS is a 24-item measure, with three positive (‘kindness’, ‘common humanity’, and ‘mindfulness’), and three negative (‘disengagement’, ‘indifference’ and ‘separation’) subscales. All studies used a total compassion towards others score, by calculating the overall mean after reverse scoring the negative subscales. This measure is found to have good internal consistency for overall compassion (α = 0.90; Pommier, 2010).

1.3.2.2.2 Self-Other Four Immeasurables (SOFI) Positive-Other Subscale

As aforementioned, the SOFI (Kraus & Sears, 2009) is also includes two subscales developed to measure compassion towards others. Two studies (Fulton, 2016; 2018) used only the SOFI Positive-Other Subscale (Kraus & Sears, 2009) to measure compassion towards others. This subscale is found to have high internal consistency (α = 0.80; Kraus & Sears, 2009).

1.3.2.2.3 Sussex-Oxford Compassion for Others Scale (SOCS-O)

As aforementioned, Gu et al.’s (2019) study was focused on the development and psychometric properties of the SOCS, which also consists of two subscales, the SOCS-S and the Sussex-Oxford Compassion for Others Scale (SCOS-O; Gu et al., 2019). Similar to the SOCS-S, the SOCS-O is a 20-item measure with five subscales and a total combined subscale score. The SOCS-O total subscale is considered to have adequate internal consistency (α= 0.90 - 0.94; Gu et al., 2019).

1.3.2.2.4 Santa Clara Brief Compassion Scale (SCBCS)
Three studies (Gu et al., 2019; Masjedi et al., 2018; Mills et al., 2018) used the Santa Clara Brief Compassion Scale (SCBCS; Hwang, Plante, & Lackey, 2008). The SCBCS is a five-item brief form of the 21-item Compassionate Love Scale (Sprecher & Fehr, 2005) offering a total score of compassion towards strangers and humankind at a large (Hwant et al., 2008). Items are scored from 0 (‘not at all true of me’) to 7 (‘very true of me’) and a total score is calculated by summing the item scores. Higher scores represent increased compassionate tendencies towards others. This measure is considered a reliable measure of compassion with good psychometric properties and internal consistency ($\alpha = 0.90$; Plante & Mejia, 2016).
Table 2
*Summary Description of Data Extracted from Studies Included in Systematic Review*

<table>
<thead>
<tr>
<th>Author(s) (Year)</th>
<th>Published Journal / Unpublished</th>
<th>Study Design and Characteristics</th>
<th>Setting / Context</th>
<th>Sample Size and Participant Characteristics</th>
<th>Measures*</th>
<th>Summary of Relevant Main Findings</th>
<th>Quality Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beaumont, Durkin, Hollins Martin, &amp; Carson (2016a)</td>
<td>Published article in Counselling and Psychotherapy Research</td>
<td>Cross-sectional quantitative survey, UK</td>
<td>University</td>
<td>$N = 54$</td>
<td>SCS; CFOS</td>
<td>N.S. positive relationship between SCS and CFOS ($r = .06$)</td>
<td>0.75</td>
</tr>
<tr>
<td>Beaumont, Durkin, Hollins Martin, &amp; Carson (2016b)</td>
<td>Published article in Midwifery</td>
<td>Cross-sectional quantitative survey, north-west of UK</td>
<td>University, purposive and convenient sample</td>
<td>$N = 103$</td>
<td>SCS; CFOS</td>
<td>N.S positive relationship between SCS and CFOS ($r = .13$)</td>
<td>0.85</td>
</tr>
<tr>
<td>Durkin, Beaumont, Hollins Martin, &amp; Carson (2016)</td>
<td>Published article in Nurse Education Today</td>
<td>Cross-sectional quantitative survey, UK</td>
<td>University, convenience sample</td>
<td>$N = 36$ (for SCS); $N = 37$ (for CFOS)</td>
<td>SCS; CFOS</td>
<td>N.S. negative relationship between SCS and CFOS ($r = -.19$)</td>
<td>0.90</td>
</tr>
</tbody>
</table>

34 females; 3 males

50
<table>
<thead>
<tr>
<th>Fulton (2012)</th>
<th>Main study: Unpublished thesis on ProQuest</th>
<th>Cross-sectional quantitative surveys, US</th>
<th>Main Study: 9 of 12 counselling programmes, convenience sample</th>
<th>Main Study: $N = 131$ (67% response rate)</th>
<th>Main Study: Sig. positive relationship between Mindful Self-Compassion (positive-self) and Mindful Other-Compassion (positive-others) ($r = .40, p &lt; .01$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilot study:</td>
<td>Pilot Study: Presented in main study appendices</td>
<td>Pilot Study: Counselling course</td>
<td>Pilot Study: $N = 5$</td>
<td>Pilot Study: N.S negative relationship between positive-self and positive-others ($r = -.08$)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Main Study: Positive-Self subscale (as S-C measure); SOFI Positive-Others subscale (as CtO measure)</td>
<td></td>
<td></td>
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</tbody>
</table>
Fulton (2018) | Published article in Counselling and Values | Cross-sectional quantitative survey, US | 12 of 15 counselling programmes, purposive and convenience sampling | $N = 152$ (70% response rate) | Master’s counselling interns Caucasian ($n = 123$); African American ($n = 14$); Multiracial ($n = 5$); Hispanic/Latina/o ($n = 5$); Asian American ($n = 4$); Other ($n = 1$) | 129 female; 23 males | SOFI (Positive-Self subscale as S-C measure; Positive-Others subscale as CtO measure) | Sig. positive relationship between Positive-Self and Positive-Others ($r = .44, p < .001$) | 0.95

Gu, Baer, Cavanagh, Kuyken, & Strauss (2019) | Published article in Assessment | Cross-sectional online quantitative survey, south of UK | Public healthcare organisation | $N = 1319$ | Healthcare staff working in: Nursing (39.2%); allied health services (15.2%); administrative & clerical roles (15.3%); all other job categories (less than 10% of sample) | White ($n = 1015$); Other ($n = 117$) | SOCS-S; SOCS-O; SCS-SF; SCBCS | Sig. positive correlations between: SOCS-S and SOCS-O ($r = .40$) | SOCS-S and SCBCS ($r = .23, p < .001$) | SOCS-O and SCS-SF ($r = .18, p < .001$) | 0.90
<table>
<thead>
<tr>
<th>Authors</th>
<th>Type of Study</th>
<th>Setting</th>
<th>Sample Size</th>
<th>Results</th>
</tr>
</thead>
</table>
| Henshall, Alexander, Molyneux, Gardiner, & McLellan (2018) | Published article in Clinical Psychology & Psychotherapy                  | Cross-Sectional quantitative and qualitative survey, England, UK       | 3 NHS Trusts  | 314 completed at least one measure; 276 completed all measures (87.9% response rate for completion of all measures)
Trust 1 & 3 = mental health trusts; Trust 2 = acute trust
Healthcare professionals working in nursing; psychology; psychotherapists; counsellors; physiotherapy; occupational therapy; speech and language therapy; healthcare assistants; support workers; other
258 female; 49 male

Masjedi (2018)          | Unpublished thesis on ProQuest                                              | 8-week MSC intervention; controlled experimental trial, online quantitative survey, San Diego California, US | 5 hospitals   | 90 enrolled on MSC; 23 included in analyses (either fully or partially completed measures at 1<sup>st</sup> and 8<sup>th</sup> MSC session); 19 included in correlation analyses (25.5% completion rate)
Healthcare workers, mental health professionals, psychology practicum students and interns: Employed (n = 12, 63%); “other” e.g., psychology

|                          |                                                                              |                                                                        |               | Sig. positive relationship between SCS-SF and CFOS
CFOS; SCS-SF (r = .31, p < .001) |
|                          |                                                                              |                                                                        |               | N.S positive relationship between SCS and SCBCS between 1<sup>st</sup> and 8<sup>th</sup> session
SCS; SCBCS (r = .03) |
| Mills, Wand, & Fraser (2018) | Published article in International Journal of Palliative Nursing | Cross-sectional quantitative survey, Australia | Palliative Care Nurses Australia, Australian & New Zealand Society of Palliative Medicine & Palliative care services listed on Palliative Care Australia’s national service directory | N = 369 (60% response rate) | SCS-SF; SCBCS | Sig. Negative correlation between SCBCS and SCS-SF | 1 |
| Roxas, David, & Aruta (2019) | Published article in International Journal for the Advancement of Counselling | Cross-sectional online quantitative survey, National Capital Region in the Philippines | Colleges and universities | N = 231 | CS; SCS | Positive correlations between variables ranged from $r = .10$ to $r = .63$ | 0.85 |

8th session, 1 month follow-up

practicum-students, psychology interns ($n = 7, 37\%$)

White/European ($n = 13$);
Middle Eastern/Semitic ($n = 1$);
Other ($n = 5$)

20 female; 3 males

20th session, 1 month follow-up

practicum-students, psychology interns ($n = 7, 37\%$)

White/European ($n = 13$);
Middle Eastern/Semitic ($n = 1$); Other ($n = 5$)

20 female; 3 males

20th session, 1 month follow-up

practicum-students, psychology interns ($n = 7, 37\%$)

White/European ($n = 13$);
Middle Eastern/Semitic ($n = 1$); Other ($n = 5$)

20 female; 3 males

20th session, 1 month follow-up

practicum-students, psychology interns ($n = 7, 37\%$)

White/European ($n = 13$);
Middle Eastern/Semitic ($n = 1$); Other ($n = 5$)

20 female; 3 males
Yip, Mak, Chio, & Law (2017)  
Published article in Mindfulness  
Cross-sectional quantitative survey, Hong Kong  

<table>
<thead>
<tr>
<th>Hospitals, non-government organisations, social welfare department, department of health, university counselling centres, correctional services, private practice, university placements</th>
<th>N = 77</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical psychologists (n = 73) and clinical psychology trainees (n = 4)</td>
<td>SCS (positive subscales only); CFOS</td>
</tr>
<tr>
<td>68 female; 9 males (trainees all females)</td>
<td>Sig. positive relationship between SCS and CFOS</td>
</tr>
</tbody>
</table>

$\text{Note. } \text{UK = United Kingdom; SCS = Self-Compassion Scale 26-item version (Neff, 2003); CFOS = Compassion for Others Scale (Pommier, 2011); N.S. = Non-Significant; US = United States; M = Mean; SD = Standard Deviation; SOFI = Self-Other Four Immeasurables (Kraus & Sears, 2009); S-C = Self-Compassion; CtO = Compassion towards Others; Sig. = Significant; SOCS-S = Sussex-Oxford Compassion for the Self Scale (Gu, et al., 2019); SOCS-O = Sussex-Oxford Compassion for Others Scale (Gu et al., 2019); SCBCS = Santa Clara Brief Compassion Scale (Hwang, Plante, & Lackey, 2008); SCS-SF = Self-Compassion Scale – Short Form 12-item version (Raes, Pommier, Neff, & Van Gucht, 2011); NHS = National Health Service; DASS-21 = Depression, Anxiety and Stress Scale 21-item (Lovibond & Lovibond, 1995); CS = Compassion Scale (Pommier, 2010).} 
* Only measures relevant to the flows of compassion are referenced in this table.
1.3.3 Quality Assessment

Overall, the methodological quality of the included studies as assessed by the SQAC (Kmet et al., 2004) varied between 0.75-1, indicating ‘good’ or ‘strong’ quality (see Table 2). All studies sufficiently described research questions and/or objectives and reported appropriate study designs. Five studies (Fulton, 2012; Henshall et al., 2018; Masjedi, 2018; Mills et al., 2018; Yip et al., 2017) described appropriate participant selection methods. Three studies (Beaumont et al., 2016a, 2016b; Durkin et al., 2016;) reported a non-ideal selection strategy of recruiting from one university course thus susceptible to bias, and three studies (Fulton, 2018; Gu et al., 2019; Roxas et al., 2019) did not sufficiently describe their selection method. For example, Fulton (2018) reported their data was gathered from a “broader study”, however this was not cited. One study (Beaumont et al., 2016a) did not report participant characteristics except identifying them as students, and Roxas et al. (2019) reported minimal participant characteristics. All other studies sufficiently described participant characteristics.

All studies utilised well defined and validated self-reported measures of self-compassion and compassion towards others. Three studies reported a power analysis and met the minimum required sample size to detect significant effects (Fulton, 2012; Fulton, 2018; Henshall et al., 2018). Eight studies did not report a power analysis (Beaumont et al., 2016a, b; Durkin et al., 2016; Gu et al., 2019; Masjedi, 2018; Mills et al., 2018; Roxas et al., 2019; Yip et al., 2017), and although they appeared to have small sample sizes, the SQAC considered them all to be appropriate due to some statistically significant results being reported. There were some inconsistencies and/or lack of clarity in two studies regarding how many participants completed some measures (Gu et al., 2019; Henshall et al., 2018), and it was also unclear in one study (Roxas et al., 2019) how the measures were disseminated to participants.
Furthermore, only four studies explicitly reported on response rates which varied between 60% and 87.9% (Fulton, 2012; 2018; Henshall et al., 2018; Mills et al., 2018); these were considered by each study as acceptable response rates for a survey design. One study reported including only 19 of 90 participants in their final analyses exploring self-compassion and compassion towards others, due to incomplete measures (Masjedi, 2018). All studies conducted appropriate analytic methods and reported some estimate of variance for the main results (i.e., means and standard deviations). All studies reported the relevant results in sufficient detail and eight studies made conclusions that were supported by their results and discussed both significant and non-significant findings. Although, three studies (Beaumont et al., 2016a, 2016b; Durkin et al., 2016) did not discuss their non-significant findings.

1.3.4 Findings

Five studies reported that a higher level of self-compassion was significantly associated with higher levels of compassion towards others (Fulton, 2012, 2018; Gu et al., 2019; Henshall et al., 2018; Yip et al., 2017), and three studies reported a non-significant positive correlation (Beaumont et al., 2016a, 2016b; Masjedi, 2018). One study reported a significant negative correlation (Mills et al., 2018), while Durkin et al. (2016) and Fulton’s (2012) pilot study reported a non-significant negative correlation; suggesting as self-compassion decreases, compassion towards others increases.

1.3.4.1 Meta-Analysis

A total of 14 effect sizes were reported across the 11 included studies (see Table 2 for extracted r values), although 12 effect sizes were included in the main meta-analyses. One study (Gu et al., 2019) reported three effect sizes due to their inclusion of multiple measures of self-compassion and compassion towards others. Multiple effect sizes from the same study are not considered independent as the same participants are measured.
multiple times (Borenstein et al., 2009). Evidence highlights that including dependent effect sizes, as though they are independent, in meta-analyses inflates the variance of the mean effect size, thus introducing bias and impacting the validity of the meta-analytic results; this is due to studies with multiple effect sizes being given more weight in the meta-analysis (Scammacca, Roberts, & Stuebing, 2014). To account for this, the three effect sizes reported by Gu et al. (2019) were initially combined via the CMA software, to contribute one independent summary effect size to the main meta-analysis ($r = .273$); a frequently implemented approach recommended by Card (2012).

Furthermore, one study (Roxas et al., 2019) reported the effect size for the relationship between self-compassion and compassion towards others lay within the range ($r = .10$ to $.63$). The exact effect size was requested from the authors by email, however no response was gained. Therefore, two meta-analyses were conducted, considering the possible smallest (.10) and biggest (.63) effect size reported by Roxas et al. (2019); this offered the most conservative and most liberal pooled effect sizes across all included studies, respectively. Cochran Q, 95% confidence intervals (CI), tau and tau-squared (study to study variances; Borenstein et al., 2009) are reported. $I^2$ statistic is also reported to deduce a measure of the heterogeneity among studies by offering a percentage that the variability across the effect sizes is due to heterogeneity rather than sampling error/chance (Higgins & Thompson, 2002).

The results of the ‘conservative’ meta-analysis revealed a small positive association between self-compassion and compassion towards others, $r = .188$, 95% confidence interval lower limit (LLCI)/upper limit (ULCI) = .065/.306, $p = .003$. The forest plot (Figure 3), ($\tau = .185$, Tau-Squared = .034; $I^2 = 86.121\%$; $Q (11) = 79.255, p <.001$) suggested there was significant heterogeneity among the included studies.

The results of the ‘liberal’ meta-analysis revealed a small positive association between self-compassion and compassion towards others, $r = .244$, 95% LLCI/ULCI = .091/.385, $p$
= .002, and there was still a significant level of variation in the distribution of effect sizes ($\tau = .245$, Tau-Squared = .060; $I^2 = 91.572\%$; $Q (11) = 130.513, p < .001$) among the included studies (see Figure 4 for Forest Plot).

Both analyses found a small effect size for the correlation between the variables, suggesting that although a higher level of self-compassion is associated with greater compassion towards others, this relationship is weak.
**Figure 3.** Forest plot for most conservative meta-analysis conducted adopting a Random Effects Model. The size of the squares represent the weight of the study in the analysis. The diamond represents the conservative average effect size of the effect sizes (Pearson’s r).
### Figure 4.

Forest plot for most liberal meta-analysis conducted adopting a Random Effects Model. The size of the squares represent the weight of the study in the analysis. The diamond represents the conservative average effect size of the effect sizes (Pearson’s r).

<table>
<thead>
<tr>
<th>Study name</th>
<th>Correlation</th>
<th>Lower limit</th>
<th>Upper limit</th>
<th>Z-Value</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beaumont, Durkin, Hollins Martin, &amp; Carson (2016a)</td>
<td>0.061</td>
<td>-0.210</td>
<td>0.323</td>
<td>0.436</td>
<td>0.663</td>
</tr>
<tr>
<td>Beaumont, Durkin, Hollins Martin, &amp; Carson (2016b)</td>
<td>0.132</td>
<td>-0.063</td>
<td>0.317</td>
<td>1.328</td>
<td>0.184</td>
</tr>
<tr>
<td>Durkin, Beaumont, Hollins Martin, &amp; Carson (2016)</td>
<td>-0.191</td>
<td>-0.489</td>
<td>0.147</td>
<td>-1.111</td>
<td>0.267</td>
</tr>
<tr>
<td>Fulton (2012)</td>
<td>0.400</td>
<td>0.245</td>
<td>0.535</td>
<td>-4.793</td>
<td>0.000</td>
</tr>
<tr>
<td>Fulton (2012, Pilot Study)</td>
<td>-0.080</td>
<td>-0.896</td>
<td>0.893</td>
<td>-0.113</td>
<td>0.910</td>
</tr>
<tr>
<td>Gu, Buer, Cavanagh, Kuyken, &amp; Strauss (2020)</td>
<td>0.440</td>
<td>0.302</td>
<td>0.580</td>
<td>5.764</td>
<td>0.000</td>
</tr>
<tr>
<td>Henshall, Alexander, Molyneux, Gardiner, &amp; McLellan (2018)</td>
<td>0.313</td>
<td>0.202</td>
<td>0.416</td>
<td>5.351</td>
<td>0.000</td>
</tr>
<tr>
<td>Masjedi (2018)</td>
<td>0.030</td>
<td>-0.430</td>
<td>0.478</td>
<td>0.120</td>
<td>0.904</td>
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<td>Mills, Wand, &amp; Fraser (2018)</td>
<td>-0.122</td>
<td>-0.221</td>
<td>-0.020</td>
<td>-2.346</td>
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<tr>
<td>Roxas, David, &amp; Aruta (2019, Liberal r value)</td>
<td>0.630</td>
<td>0.545</td>
<td>0.702</td>
<td>11.195</td>
<td>0.000</td>
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<tr>
<td>Yip, Mak, Chio, &amp; Law (2017)</td>
<td>0.370</td>
<td>0.159</td>
<td>0.549</td>
<td>3.341</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>0.244</td>
<td>0.091</td>
<td>0.385</td>
<td>3.089</td>
<td>0.002</td>
</tr>
</tbody>
</table>
1.3.4.2 Additional Analyses

It was not deemed appropriate to conduct further subgroup meta-analyses exploring differences between qualified and unqualified healthcare professionals as sufficient data (i.e. five studies per group) was not available. Further, there did not appear to be enough variation in the quality of the studies to explore the impact of study quality on effect size. While four of the included studies reported five effect sizes for unqualified participants (Beaumont et al., 2016a, b; Fulton, 2012 (including the pilot study); Fulton, 2018), there were only four effect sizes reported across the four studies with qualified participants (Durkin et al., 2016; Gu et al., 2019; Henshall et al., 2018; Mills et al., 2018); three studies reported effect sizes for qualified and unqualified participants combined (Masjedi et al., 2018; Roxas et al., 2019; Yip et al., 2017). Therefore, the subgroup findings are narratively synthesised below.

Across the included studies distinctly looking at unqualified healthcare professionals, two studies reported a statistically significant positive relationship (Fulton, 2012, 2018), and two studies reported a statistically non-significant positive relationship (Beaumont et al., 2016a, b), while Fulton’s (2012) pilot study reported a non-significant negative relationship between self-compassion and compassion towards others. Among studies looking at qualified healthcare professionals, two reported a statistically significant positive relationship (Gu et al., 2019; Henshall et al., 2018), one reported a statistically significant negative relationship (Mills et al., 2018), and one reported a statistically non-significant negative association (Durkin et al., 2016) between self-compassion and compassion towards others.
1.4 Discussion

1.4.1 Findings in Context

The current systematic review and meta-analysis aimed to explore the relationship between two of the three flows of compassion (Gilbert, 2014) among healthcare professionals, namely self-compassion and compassion towards others. As expected, none of the included studies reported on the third flow of compassion, compassion from others, therefore this flow was not discussed in this review. The current review builds up on the existing body of evidence exploring the relationship between self-compassion and compassion towards others (e.g., Lopez et al., 2018; Neff & Pommier, 2013), by focusing on healthcare professionals. This section will first discuss the main finding of the review and meta-analysis in relation to the wider theory and evidence-base. It will then provide a methodological critique of the included studies and the review process, ending with implications, future research recommendations and conclusions.

In total 11 studies (plus a pilot study), both published and unpublished, met the aforementioned inclusion criteria and only five studies specifically explored the relationship between the two flows of compassion as part of their main study (Beaumont et al., 2016b; Durkin et al., 2016; Fulton, 2018; Mills et al., 2018; Roxas et al., 2019). While there were mixed findings among the studies, with nine studies reporting a positive association and three studies reporting a negative association, the meta-analyses conducted in this review highlighted a significant small positive association between self-compassion and compassion towards others among healthcare professionals. This suggests that healthcare professionals with higher levels of self-compassion had more compassion towards others, and those with lower levels of self-compassion had less compassion towards others. These findings provide some support for the SMT which states the relationship between the flows of compassion is an interactive process wherein care-giving
mentalities are also activated when one is self-compassionate (Hermanto & Zuroff, 2016), and also Buddhist thinking which suggests self-compassion might be essential to show true compassion towards others (Strauss et al., 2016). However, the small effect size found for the association between the two flows suggests it may also be possible for healthcare professionals to be compassionate towards others, but not themselves, or vice versa (Lopez et al., 2018).

Both self-compassion and compassion towards others are considered important qualities for healthcare professionals, particularly in maintaining their own mental wellbeing and providing patients with compassionate care (Beaumont & Holllins Martin, 2016; Boellinghaus et al., 2014; Gilbert, 2005; Ringenbach, 2009). Growing evidence suggests the flows of compassion influence each other (Hermanto & Zuroff, 2016), and the current review supports the idea that it may be possible to increase one flow to increase the others. Indeed, previous research suggested that it may be possible to increase compassion for others by cultivating self-compassion, and thus enhance compassionate care among healthcare professionals (Barratt, 2017; Finlay-Jones, et al., 2018; Mills et al., 2015). However, while the current review reports an association between the two flows, it is not possible to infer causation (i.e. whether self-compassion predicts compassion towards others, or vice versa) as it is based on correlational data, thus further research is required to explore the nature of the relationship.

It is important consider that while the current review found a weak association between these two flows of compassion, Gilbert et al. (2017) reported a moderate association. An explanation for this difference is that there may be other factors influencing compassion towards others among healthcare professionals. One such factor could be ‘empathic distress fatigue’, alternatively referred to as ‘compassion fatigue’ (Klimecki & Singer, 2011), often referred to as the ‘cost of caring’ and has been related to the loss of compassion in healthcare settings (Sinclair, Raffin-Bouchal, Venturato, 2018).
Evidence suggests individuals may become demotivated from helping another following aversive and draining emotions experienced in response to another’s suffering (Klimecki & Singer, 2012). While years of experience has been associated as a protective factor against empathic distress fatigue (Cocker & Joss, 2016), across the studies included in this review, there is a lack of clarity regarding how long the healthcare professionals were working for and whether they experienced empathic distress fatigue. This may potentially impact the relationship between self-compassion and compassion towards others. Consequently, it would be helpful for future research to consider the influence of factors such as, empathic distress fatigue, as well as years of experience, when exploring the relationship between the flows of compassion among healthcare professionals.

Furthermore, Hermanto and Zuroff (2016) found individuals high in care-giving mentalities (compassion towards others) had the lowest self-compassion scores if they were low in care-seeking mentalities (openness to compassion from others). Individuals with the highest self-compassion scores were also high in both care-giving and care-seeking mentalities (Hermanto & Zuroff, 2016). This suggests poor seeking of care, or little openness to compassion from others, may impact the strength of the relationship between self-compassion and compassion towards others. As aforementioned, compassion from others was not measured in any of the studies in this review to explore whether levels of compassion from others impacted the findings, indicating the need for further research.

1.4.2 Strengths and Limitation of the Included Studies

Given the importance, but limited understanding of compassion in healthcare settings, the included studies extend our empirical knowledge of compassion with helpful recommendations for future research to build upon. The studies utilised validated measures, and together, cover a range of both qualified and unqualified healthcare
professions and age groups. Further, all but one study included in the review were cross-sectional in design, although all studies reported cross-sectional findings which were included in the meta-analysis. While Masjedi (2018) attempted a multiple baseline design, due to no follow-up data being gathered in their study, they excluded time-points from their analyses and only reported cross-sectional analyses. Consequently, while the studies offer a helpful snapshot of the association between self-compassion and compassion towards others, they cannot infer causation or direction of the interaction between them. In addition, there are some notable methodological issues across the studies that require consideration.

The most prominent methodological limitations related to sampling methods and participant characteristics, which have an impact on the representativeness and generalisability of the findings. First, all studies employed a convenience sampling of self-selecting participants, therefore may not be representative of the targeted healthcare population due to self-selection bias and non-response bias (Fowler, 2009). There may have been systematic differences (i.e., feelings of compassion), between healthcare professionals motivated to participate and those who did not, particularly as response rates varied between 67% and 87.9% in the included studies reporting on response rates (Fulton, 2012; 2018; Henshall et al., 2018; Masjedi, 2018). There may also have been systematic differences between those participating versus dropping out, although none of the included studies conducted any comparative analyses to explore this further. Also, several studies (Beaumont et al., 2016a, 2016b; Durkin et al., 2016; Fulton, 2018) reported recruiting from specific classroom or supervision settings to enhance recruitment. This may have resulted in participants feeling pressured to participate or respond in a certain way as they are on a training course wherein they are continually assessed, and may have resulted in social desirability bias (Krumpal, 2013). Similarly, by only employing self-reported measures, the other studies also reported being susceptible to social desirability bias, particularly as
reporting compassion towards others is considered a socially desirable response (Lopez et al., 2018). Therefore, there may have been an over-reporting of desirable responses and underreporting of undesirable responses. Two studies (Fulton, 2012; 2018) reported minimising the impact of social desirability via ambiguous wording on consent forms to keep participants naïve to the study variables being measured. One study (Yip et al., 2017) measured social desirability but did not include it as a control in their analyses between the flows of compassion. These three studies also found a positive association between the two flows of compassion. Only one study measured and controlled for social desirability in their analyses (Mills et al., 2018), and interestingly, was one of the three studies reporting a negative association between self-compassion and compassion towards others. Although it is unclear whether this negative relationship was due to the effects of social desirability being controlled for, or due to the participants in this study consisting of palliative care healthcare professionals, who may be more vulnerable to empathic distress fatigue.

In terms of participant characteristics, although one study (Beaumont et al., 2016a) did not report any participant characteristics, overall, the participants predominantly consisted of a homogenous group of females of a Caucasian/White background. This therefore limits the generalisability of findings to males and those from other ethnic backgrounds. In addition, only three studies (Fulton, 2012; Fulton, 2018; Henshall et al., 2018) referred to a power analysis to justify their sample size, therefore it is difficult to determine whether studies had sufficient statistical power or whether there were possibilities for Type II error (Cohen, 1992).

Furthermore, while all included studies used validated measures of self-compassion, a recent systematic review by Strauss et al. (2016), claimed that current measures of this construct fail to comprehensively measure the construct of compassion. Lopez et al. (2018) also highlighted that the way in which self-compassion and compassion towards others are conceptualised and measured differ; while self-compassion is often
assessed as a multidimensional construct (Neff, 2003), compassion towards others is often assessed as a one-dimension construct (Shiota, Keltner, & John, 2006). The SCS (Neff, 2003) and SCS-SF (Raes et al., 2011) were the most commonly used measures of self-compassion across the majority of papers. However, the way in which both these measures were scored across these studies varied which may have impacted construct validity. Of significance, there is currently ongoing debate in the literature regarding construct validity of Neff’s (2003) SCS (Muris, Otgaar, & Petrocchi, 2016; Lopez et al., 2015). This criticism is primarily aimed at the inclusion of the three negative subscales (‘self-judgement’, ‘isolation’ and ‘over-identification’) in the total self-compassion score (Muris, Otgaar, & Pfattheicher, 2018). These subscales are considered to be parallel to psychopathological symptomatology, such as ‘self-criticism’ (Zuroff et al., 1990), ‘withdrawal/loneliness’ (Rubin & Coplan, 2004) and ‘self-focused rumination’ (Lyubomirsky & Nolen-Hoeksema, 1995), as opposed to reflecting the true nature of self-compassion (Mauris et al., 2016; 2018). Neff (2016a; 2016b) maintains that the SCS is in line with her theoretical conceptualisation of self-compassion as a state of mind involving the balance between uncompassionate and compassionate self-responding. However, more recent research has highlighted that structural models of the SCS fit better when they are considered as separate factors (self-compassion and self-coldness), as opposed to one self-compassion factor (e.g. Brenner, Heath, Vogel, & Crede, 2017; Neff, Toth-Kiraly, & Colosimo, 2018) and that the negative items should not be considered as reflecting core self-compassionate features (Mauris et al., 2018). The inclusion of these negative subscales in the total self-compassion score across research, is thought to have inflated the negative associations commonly found between self-compassion and psychopathology (Mauris et al., 2018). Of relevance to the findings of the current review, in a similar way, the inclusion of the ‘self-coldness’ items may have deflated the association between self-compassion and compassion towards others, which may account for the weak relationship found in this review.
Taken together, it seems fair to suggest that further research accounting for these limitations is required to be able to more confidently draw firmer conclusions.

1.4.3 Strengths and Limitations of the Review Process

A strength of the current review is that, based on the author’s knowledge, it is the first systematic review and meta-analysis of the existing literature exploring the relationship between the two flows of compassion among healthcare professionals. Conducting a meta-analysis allowed for increased validity and precision of the estimated relationship between the two flows, and the pooled data enhanced power to detect an effect (Stone & Rosopa, 2017). The three flows of compassion is a relatively new concept (Gilbert, 2014), with research interest in this area growing, and this timely review highlights considerations for future research to build upon. Another strength is that the current review was conducted in line with PRISMA guidelines (Liberati et al., 2009) to enhance the transparency and replicability of this review. Furthermore, the SQAC (Kmet et al., 2004) was selected due to its flexibility and ability to consider a range of diverse study designs. There was ‘almost perfect’ agreement in the scoring with a second reviewer, which enhanced the validity and reliability of the assessment outcome.

However, this review is not without its limitations. First, while the literature search was extensive, due to time and resources constraints, studies that were not written in English language were excluded, which may have caused a selection bias and cultural bias, thus limiting the generalisability of the findings. There was, a surprisingly small number of studies focusing on this area despite the growing evidence-base around compassion. While the initial scoping searches and hand searching of reference lists increases confidence in a thorough search of all the evidence available, it was not possible to access the full-text version of three articles that were deemed eligible for full-text screening (Gurfein, 2017; Strauss, 2015; Taylor, 2019).
1.4.4 Further Research Directions

Several studies (Beaumont et al., 2016a; 2016b; Durkin et al., 2016; Fulton, 2012; Gu et al., 2019) in the review recommended longitudinal surveys and gathering data across multiple time points to allow for richer information regarding any direction of changes between self-compassion and compassion towards others over time. A number of the studies (Beaumont et al., 2016a; 2016b; Durkin et al., 2016; Mills et al., 2018) also recommended future research to consider qualitative data to allow for enriched findings relating to the participants’ subjective experiences of self-compassion and compassion towards others. Furthermore, Henshall et al. (2016) highlighted that due to the cross-sectional nature of the studies, participants’ responses represented their views at a single point in time and does not consider how an individual’s compassion may change or be maintained towards different individuals or across different situations. Therefore, Henshall and colleagues recommended future research to consider providing a context around the measures used, to account for different individuals and contexts, as this may yield different findings.

As it was not possible to conduct further sub-group meta-analyses to explore possible differences between qualified and unqualified healthcare professionals, it would be helpful for future research to consider this. It would also be helpful for future research to consider the impact of confounders such as age, gender and years of clinical experience on the relationship between the two flows (Masjedi, 2018), as well as any cross-cultural differences which may impact the strength of the relationship between the flows (Sinclair et al., 2016). For example, a recent meta-analysis highlighted lower self-compassion in females compared to males, when measured by the SCS total score (Yarnell et al., 2015). Further research could also investigate potential interventions that may promote self-compassion and compassion towards others in healthcare professionals (Durkin et al., 2016).
Gilbert’s (2014) flows of compassion theory is a relatively new construct and yet to be researched using measures directly relating to the theory. Recently, Gilbert et al. (2017) developed the Compassionate Engagement and Action Scales (CEAS) that measure the three flows of compassion. It may be helpful for further research to utilise the CEAS to explore Gilbert’s theory in more detail. Furthermore, Henshall et al. (2016) highlighted that reporting compassion towards others, does not necessarily measure compassionate behaviour. Gilbert et al.’s (2017) CEAS includes subscales measuring both engagement with compassion, and also one’s ability to take compassionate actions, which may support the measurement of compassionate behaviour.

1.4.5 Clinical Implications

This review has shown the importance of self-compassion not only in relation to healthcare professionals maintaining their own mental health (Ringenbach, 2009), but also enhancing compassionate care to others. (Barratt, 2017; Finlay-Jones et al., 2018; Mills, Wand, & Fraser, 2015). The positive association found in this meta-analysis between the two flows of compassion offers some support that by enhancing one of the two flows, it might be possible to enhance the other flow also. With the current drive on enhancing compassionate care as a patient right with the Francis Inquiry Report (Francis, 2013) and NHS values (Department of Health, 2015) per se, any strategies to improve poor patient outcomes (Shapiro & Izett, 2008) is vital. Particularly as patients and families consistently rank compassion among their greatest healthcare needs (Cherlin, Schulman-Green, McCorkle, Johnson-Hurzeler, & Bradley, 2004; Heyland et al., 2006; Heyland et al., 2010; McDonagh et al., 2004). Thus, further research is essential to enhance our understanding of the nature and causal relationship between these flows in healthcare professionals.
1.4.6 Conclusions

Taken together, this systematic review and meta-analysis aimed to bring together and critique the evidence base regarding the relationship between self-compassion and compassion towards others in healthcare professionals. Overall, a small positive association was found between the two flows of compassion across the majority of studies included in this review, which offers some support that it may be possible for interventions to target self-compassion to also enhance compassionate care towards others. However, due to the cross-sectional nature of the existing studies, conclusions regarding the causal relationship between self-compassion and compassion towards others cannot be drawn, and the limitations highlighted need to be considered when interpreting the results. The research in this area is still in its infancy and further research can build upon these findings to further our understanding of how self-compassion and compassion towards others influence one another in healthcare settings.
Chapter 2: A Study Investigating the Impact of a Brief Compassionate Mind Training on Burnout and Self-Criticism in Mental Healthcare Professionals

“If you want others to be happy, practice compassion. If you want to be happy, practice compassion”


2.1 Introduction

2.1.1 Burnout in the Mental Healthcare Profession

Rising levels of burnout is a growing area of concern among healthcare professionals (Royal College of Physicians, 2015). Typically associated with care-giving professions, several definitions of burnout exist, with a common theme that it is a state of ‘emotional exhaustion’, a specific psychological reaction to chronic work-related stress (Atkinson, Rodman, Thuras, Shiroma, & Lim, 2017; Maslach, Schaufeli, & Leiter, 2001). Of interest, research has shown that mental healthcare professionals in particular, report higher levels of burnout than professionals from other healthcare sectors (e.g., Johnson et al., 2018; Morse, Salyers, Rollins, Monroe-DeVita, & Pfahler, 2012), with the prevalence of mental healthcare professionals reporting experiencing burnout ranging between 21-67% (Foster et al., 2018; Morse et al., 2012).

There are inevitably some common causes of burnout between all healthcare professionals, including inadequate staffing, excessive workload and a lack of support (Johnson et al., 2018). There are also several differences pertinent to mental healthcare professionals, such as treating patients against their will, high levels of violence and hostility, self-harm, suicidality, and the ‘emotional labour’ experienced when caring for patients who are emotionally unwell (Barnett, Baker, Elman, & Schoener, 2007; Knickman...
& Snell 2002; Johnson et al., 2018; Letvak & Buck 2008; Renwick et al., 2016; Rupert, Miller, & Dorociak, 2015; Seago, Ash, Spetx, Coffman, & Grumbach, 2001). Yet, research exploring burnout among mental healthcare professionals is limited when compared with other healthcare professionals (Johnson et al., 2018).

The personal impact of burnout is highlighted through its associations with negative outcomes, including marital dysfunction, substance misuse, impaired patient care, increased medical errors, premature retirement and suicide (Hall, Johnson, Watt, Tispa, & O’Connor, 2016; Johnson et al., 2017; Kumar, 2016). Burnout is also associated with depression and anxiety (Morse et al., 2012) and increased rates of sickness absence from work (Borritz, Rugulies, Christensen, Villadsen, & Kristensen, 2006). However, there is little consensus regarding how best to treat burnout (Ahola, Toppinen-Tanner, & Seppanen, 2017). In a meta-analysis, Dreison et al. (2016) found limited evidence for the effectiveness of interventions aimed at a range of healthcare professionals, such as relaxation and Cognitive Behaviour Therapy (CBT). This highlights the need for more research in this area to help reduce burnout and its impact on both the individual and the economy in terms of sick leave.

Of interest, there are several measures of burnout and while there is no current consensus among researchers regarding how best to assess burnout (Ahola, et al., 2017), the Copenhagen Burnout Inventory (CBI; Kristensen, Borritz, Villadsen, & Christensen, 2005) is becoming increasingly used to research burnout across many countries (e.g., Bagaajav, Myagmarjav, Nanjid, Otgon, & Chae, 2011; Chou, Li & Hu, 2014; Kristensen et al., 2005). The CBI considers ‘emotional exhaustion’ as the primary feature of burnout, and specifies burnout into three areas, burnout attributed to ‘personal factors’, to ‘clients’ and also to one’s ‘work’; these areas will be explored in the current study.
2.1.2 Compassionate Mind Training and Emotion Regulation Systems Theory

Compassionate Mind Training (CMT), which is part of Compassion Focused Therapy (CFT), was initially developed for individuals with high levels of shame and self-criticism (Gilbert, 2000, 2010; Gilbert & Irons, 2005; Gilbert & Procter, 2006). While CFT is a therapeutic model (Gilbert, 2005), CMT consists of a set of practices aimed to help individuals experience compassion and develop their “compassionate self” by cultivating the three flows of compassion, namely compassion to self, towards others and from others (Gilbert & Irons, 2005). The underlying theoretical principles are based on Gilbert’s evolutionary model of compassion and Social Mentality Theory (SMT), as discussed in Chapter One (Gilbert, 2010, 2014; Gilbert et al., 2017). Gilbert (2005) also theorised that three basic emotion regulation systems, referred to as the ‘threat’, ‘drive’, and ‘soothing’ systems (see Figure 5), evolved to prompt different responses to meet evolutionary survival needs (Deupe & Morrone-Strupinsky, 2005; Gilbert, 2005).

![Figure 5. Interaction between the three emotion regulation systems. First published in Gilbert (2009), permission to reproduce from Little Brown Book group.](image-url)
From a CFT perspective, distress and psychopathology is related to the over-active functioning of the threat system, as well as difficulties accessing the drive and soothing systems (Dale-Hewitt & Irons, 2015; Gilbert, 2009). When in balance with the threat and soothing systems, the ‘drive system’ drives and motivates individuals towards important life goals and, if unbalanced (i.e., over or under-activated), the threat system becomes activated (Gilbert, 2010). The ‘soothing system’ is described as the ‘rest and digest system’, evolved to help animals to rest and recover when they are not responding to threats or pursuing resources (Dale-Hewitt & Irons, 2015). This system is associated with the activation of the parasympathetic nervous system (Porges, 2009) which, when activated, inhibits the reactivity of the sympathetic nervous system, such as threat-based emotions and behavioural responses (Gilbert, 2005). This system is theorised to have evolved with the attachment system (Depue & Morrone-Strupinsky, 2005; Gilbert, 2009), and stimulates affiliative emotions (i.e., compassion) and therefore, has a natural impact on regulating activated threat and drive systems (Gilbert, 2005). Gilbert (2005) theorises that individuals switch between these three emotion regulation systems to manage their emotional well-being and that mental health difficulties occur as the result of an imbalance between these systems, due to over-activated threat and drive systems and an under-activated soothing system (Gilbert, 2005; Gilbert & Proctor, 2006). It is therefore proposed that by nurturing the soothing system, one can develop a more compassionate perspective, creating a balance between the three emotion regulation systems (Gilbert, 2009).

Although, there is limited empirical understanding of how CFT and CMT impacts upon the three emotion regulation systems proposed by the CFT model, particularly the drive system (Panting, 2018). There is growing evidence highlighting the effectiveness of CMT on increasing levels of compassion and subsequently reducing levels of emotional distress in both non-clinical (Matos et al., 2017) and clinical populations (Beaumont et al., 2012; Gilbert & Procter, 2006; Mayhew & Gilbert, 2008). CMT practices involve working
with physiological processes (i.e., body posture, breathing, facial expressions and voice tones) as well as developing compassionate qualities such as wisdom, strength and commitment to stimulate the three flows of compassion (Matos, Duarte, Duarte, Gilbert, & Pinto-Gouveia, 2018). These practices are shown to stimulate the parasympathetic nervous system (associated with the soothing system) and inhibit the reactivity of the sympathetic nervous system (associated with the threat and drive systems; Matos et al., 2017). Currently, there is no consensus on the most useful CMT practices, with several variations in the literature (Beaumont et al., 2012; Gilbert & Procter, 2006; Matos et al., 2017; Mayhew & Gilbert, 2008). For example, Matos et al.’s (2017) CMT intervention consisted of participants attending a two hour face-to-face psychoeducational session, followed by a set of daily audio recorded CMT practices for two weeks, which resulted in significant increases across all three flows of compassion, as well as reductions in levels of self-criticism, depression and stress.

2.1.2.1 Emotion regulation systems and burnout

In consideration of burnout in healthcare professionals, based on the aforementioned model, it has been argued that the climate within the NHS of performance and outcome monitoring, challenging work environments, alongside job uncertainty, results in the threat and drive systems being over-activated (Cole-King & Gilbert, 2011). This in turn leads to an increased likelihood of burnout and distress due to the over-activation of both the drive and threat systems and under-activation of the soothing system (Beaumont & Hollins-Martin, 2016; Henshall, Alexander, Molyneux, Gardiner, & McLellan, 2018). It therefore seems fair to propose that CMT may be a suitable intervention for reducing levels of burnout, particularly as the flows of compassion have been associated with activating the soothing system and thus balancing the emotion regulation systems (Beaumont & Hollins-Martin, 2016; Gilbert, 2010).
2.1.3 The Three Flows and Burnout in Healthcare Professionals

Self-compassion has been associated with an increased ability to cope more effectively in times of distress (Terry, Leary, & Mehta, 2013) and also reduced levels of anxiety and depression (e.g., Neff, Hsieh, & Dejitterat, 2005; Sbarra, Smith, & Mehl, 2012). Of note, there are studies supporting the idea that increased self-compassion might be associated with greater levels of resilience, which in turn protects against burnout among a range of healthcare professionals such as nurses (Duarte, Pinto-Gouveia, & Cruz, 2016; Durkin, Beaumont, Hollins-Martin, & Carson, 2016), midwives (Beaumont, Durkin, Hollins Martin, & Carson, 2016b), and paediatric/medicine paediatric residents (Olson, Kemper, & Mahan, 2015). Whilst such findings are promising, there is limited generalisability to other healthcare professionals, including mental healthcare professionals. In a recent cross-sectional study, Atkinson et al. (2017) explored this association in a group of Veterans Affairs mental healthcare professionals and found that higher levels of burnout associated with lower levels self-compassion, even when accounting for the effects of depression. Beaumont, Durkin, Hollins Martin, and Carson (2015) also reported similar findings among student CBT therapists and counsellors.

Furthermore, Gilbert and Choden (2013) have suggested a continuous external flow of compassion (compassion towards others), in the absence of self-compassion, may lead to individuals experiencing burnout. In support, Beaumont et al. (2016a) reported a significant negative relationship between burnout and compassion towards others in their sample of student counsellors, suggesting healthcare professionals may find it more difficult to give compassion, if they are themselves suffering from burnout. Similarly, it has been suggested that receiving compassion from others may reduce levels of distress by enhancing activation of the soothing system (Gilbert, 2010; Irons & Beaumont, 2017). Therefore, compassion from others may also reduce burnout by enhancing the activation of the soothing system. However, this remains an under researched area particularly with
mental health professionals. Additionally, the evidence is cross-sectional, so a causal relationship cannot be inferred (Atkinson et al., 2017; Beaumont et al., 2015). This emerging area of research emphasises the importance of further exploring the relationship between the three flows of compassion and burnout, with the aim of creating interventions to reduce burnout and improve patient care in healthcare professionals.

2.1.3.1 Self-Criticism and burnout in healthcare professionals

On a similar note, self-criticism, like self-compassion, is considered to be a form of self-to-self relating according to Gilbert’s SMT (Gilbert, 2010). Self-criticism is considered an active defensive strategy in response to the activated threat system (Gilbert, 2005), with high self-criticism associated with decreased Heart Rate Variability (HRV; Rockliff, Gilbert, McEwan, Lightman, & Golver, 2008), and difficulties in accessing feelings of self-compassion (Gilbert & Procter, 2006; Gilbert, Baldwin, Irons, Baccus, & Clark, 2008). Also considered a pioneer in self-compassion research, Neff (2003) described self-criticism as the opposite of self-kindness, and considers self-kindness as one of the three essential components of self-compassion together with common humanity and mindfulness.

There is some evidence associating burnout with higher levels of self-criticism among mental healthcare professionals (Skovholt & Trotter-Mathison, 2011), including trainee psychologists (Richardson, Trusty, & George, 2018). Within the CFT perspective, the generating of feelings of self-soothing, warmth and self-reassurance is considered the antidote to the sense of threat that self-critics experience (Gilbert & Procter, 2006). Indeed, CMT has been shown to be effective in reducing levels of self-critical judgement, while increasing self-compassion across various populations, including general population and college students (Matos et al., 2017), university students (McEwan & Gilbert, 2015), student psychotherapists (Beaumont, Rayner, Durkin, & Bowling, 2017), and clinical
groups (Gilbert & Proctor, 2006). Taken together, it seems fair to propose the importance for research to consider the concept of self-criticism when exploring self-compassion and burnout among mental healthcare professionals using the CFT perspective.

2.1.4 Rationale for this Study

Overall, although burnout is a growing problem with adverse work and health-related outcomes, particularly among mental healthcare professionals, there is no consensus regarding how to treat it effectively (Ahola et al., 2017). Burnout has been associated with an imbalance of the emotion regulation systems, and recent evidence suggests self-compassion may provide resilience against the likelihood of burnout (Beaumont, et al., 2016b; Duarte et al., 2016; Durkin et al., 2016; Olson et al., 2015). CMT aims to cultivate a compassionate self (Gilbert & Irons, 2005) and balance the emotion regulation systems (Gilbert, 2009) by stimulating the soothing system, which may be a helpful intervention to target burnout. Burnout has also been associated with all three flows of compassion (e.g., Beaumont et al., 2016a, 2016b; Duarte et al., 2016; Durkin et al., 2016; Olson et al., 2015; Gilbert, 2010; Irons & Beaumont, 2017). However, research exploring the interplay with the flows of compassion and burnout is limited in mental healthcare professionals. Further, while high levels of self-criticism and its association with burnout is noted (Skovholt & Trotter-Mathison, 2011), more research is required to further explore this relationship alongside the flows of compassion.

2.1.5 Aims and Objectives

The primary aim of this study was to build upon the aforementioned existing evidence-base (e.g., Atkinson et al., 2017; Beaumont et al., 2015), by exploring the effectiveness of a brief-CMT intervention using a randomised control trial on self-reported levels of the three flows of compassion (to self, towards others, and from others), three
areas of burnout (personal, work-related and client-related), and self-criticism among mental healthcare professionals. The main objectives were to:

1) Collate baseline levels of self-reported three flows of compassion, three areas of burnout, self-criticism, depression, anxiety, and stress in mental healthcare professionals to explore associations between the measures at baseline.

2) Explore the extent to which the three flows of compassion and self-criticism predict burnout.

3) Examine whether a brief online CMT, aimed to cultivate the three flows of compassion, is effective in increasing levels of the three flows compassion and reducing the three areas of burnout and self-criticism in mental healthcare professionals, compared to a waitlist control.

4) Explore the feasibility and accessibility of the brief CMT intervention among mental healthcare professionals.

2.1.6 Hypotheses

2.1.6.1 Part A – Baseline Phase

1) At baseline, mental healthcare professionals with lower levels of compassion to self, towards others and from others will be associated with higher levels of all three areas of burnout (personal, client-related, and work-related) and self-criticism.

2) At baseline, mental healthcare professionals with higher levels of all three areas of burnout (personal, client-related and work-related) will be associated with higher levels of self-criticism, depression, anxiety and stress.

2.1.6.2 Part B – Intervention Phase

3) Mental healthcare professionals in the intervention condition will report significantly higher levels of the three flows of compassion (to self, towards others
and from others) and significantly lower levels of self-criticism post-intervention, compared to the wait-list control group. These changes will be maintained at follow-up.

4) Mental healthcare professionals in the intervention condition will report significantly lower levels of all three areas of burnout (personal, client-related and work-related) post-intervention, compared to the wait-list control group. These changes will be maintained at follow-up.

5) Mental healthcare professionals in the waitlist control condition will show no significant difference in levels of the three flows of compassion (to self, towards others, and from others) or self-criticism across any of the time points.

2.2 Methodology

2.2.1 Ethical Considerations

Full ethical approval was granted by both the University of Southampton’s Ethics and Research Governance Committee (ERGO ID: 48071; see Appendix D) and the NHS Health Research Authority (IRAS ID: 263513; see Appendix E). Informed consent was gained from all participants who were above the age of 18 years, via an online consent statement (see Appendix F).

2.2.2 Design

The current study employed a 2 x 3 mixed design, with one between-subjects variable (condition) with two levels (‘intervention’ vs. ‘waitlist control’) and one within-subjects variable (time) with three levels (‘baseline’ vs. ‘post-intervention’ vs. ‘follow-up’). The dependant variables are the self-reported measures of the three flows of compassion, compassion to self (CEAS-SC), compassion towards others (CEAS-CtO), and
compassion from others (CEAS-CfO), three areas of burnout, personal burnout (PBO), client-related burnout (C-RBO) and work-related burnout (W-RBO), self-criticism (SC), depression (DASS-D), anxiety (DASS-A) and stress (DASS-S). Additional likert-scale questions were also developed for the intervention group at both ‘post-intervention’ and at ‘follow-up’ to explore the accessibility and feasibility of the intervention.

2.2.2.1 Inclusion/Exclusion Criteria

Individuals who self-identified as mental healthcare professionals, were deemed eligible for the study. Participants were required to have been employed for at least six months in a mental healthcare setting, providing direct patient care, to allow for sufficient exposure to clinical practice. Individuals were excluded if they were already actively participating in a CFT/CMT focused intervention. See Table 3 for inclusion/exclusion criteria.
2.2.3 Power Analysis

Power analyses were conducted using G*Power (version 3.1.9.2; Faul, Erdfelder, Buchner, & Lang, 2013) prior to the commencement of the study. Assuming a medium effect size and power of 0.80, a minimum of 55 participants for a multiple regression with four predictors was suggested. Also assuming a medium effect size, a total of 111 participants for a repeated measures MANOVA was suggested.

2.2.4 Participants

In total, 273 mental healthcare professionals consented to participate in the study (see Figure 6 for participation flowchart). Of which, 12 participants were not eligible for the study and 57 participants chose not to complete the study.

During baseline (Part A), 205 participants completed all measures (34 males, 171 females). Of these participants, 172 participants opted-in to Part B and 86 participants were allocated to each condition (intervention vs. waitlist). In the intervention group, 20
participants completed all measures at ‘post-intervention’ and ‘follow-up’, while 8 participants only completed measures at ‘post-intervention’ and 7 participants only at ‘follow-up’. In the waitlist control group, 27 participants completed all measures at ‘post-intervention’ and ‘follow-up’, while 13 participants only completed measures at ‘post-intervention’ and 11 participants only at ‘follow-up’. See Table 4 for a breakdown of participant demographics by group. Participants were from a range of mental healthcare professions and services, both NHS and non-NHS (see Table G1 in Appendix G for additional participant demographics).
Figure 6. Participation flowchart.
Table 4

Participant Demographics by Group and Baseline Differences

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Baseline and Post-intervention Data</th>
<th>Baseline, Post-intervention and Follow-up Data</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline</td>
<td>Waitlist Intervention Group</td>
</tr>
<tr>
<td>Total (n)</td>
<td>205</td>
<td>205</td>
</tr>
<tr>
<td>Age (M/SD)</td>
<td>38.83(11.13)</td>
<td>35.93(9.51)</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>34 (16.6%)</td>
<td>2 (7.1%)</td>
</tr>
<tr>
<td>Female</td>
<td>171 (83.4%)</td>
<td>26 (92.9%)</td>
</tr>
<tr>
<td>Working for</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NHS</td>
<td>189 (92.2%)</td>
<td>24 (85.7%)</td>
</tr>
<tr>
<td>A non-NHS</td>
<td>16 (7.8%)</td>
<td>4 (14.3%)</td>
</tr>
<tr>
<td>Mental Healthcare Professional</td>
<td></td>
<td></td>
</tr>
<tr>
<td>By qualification</td>
<td>138 (67.3%)</td>
<td>14 (50%)</td>
</tr>
<tr>
<td>By experience</td>
<td>25 (12.2%)</td>
<td>4 (14.3%)</td>
</tr>
<tr>
<td>Student/Assistant/Trainee</td>
<td>42 (20.5%)</td>
<td>10 (35.7%)</td>
</tr>
<tr>
<td>Type of Employment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>159 (77.6%)</td>
<td>21 (75%)</td>
</tr>
<tr>
<td>Part-time</td>
<td>44 (21.5%)</td>
<td>7 (25%)</td>
</tr>
<tr>
<td>Other</td>
<td>2 (1%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Baseline differences</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>-</td>
<td>2.26(0.81)</td>
</tr>
<tr>
<td>Anxiety</td>
<td>-</td>
<td>1.48(0.97)</td>
</tr>
<tr>
<td>Stress</td>
<td>-</td>
<td>7.64(3.5)</td>
</tr>
</tbody>
</table>

*Note. M = Mean; SD = Standard Deviation.*
2.2.5 Measures

All participants completed the following measures:¹

2.2.5.1 Demographic information questionnaire

A demographic information measure was developed to screen for eligibility to participate, and to allow for further exploratory analyses. This measure included questions relating to age, gender, NHS or non-NHS worker, status (i.e., student, profession/title, service they work in, type of employment and years of direct clinical work). See Appendix H for eligibility questions² and Appendix I for questionnaire.

2.2.5.2 Compassionate Engagement and Action Scales³ (CEAS; Gilbert et al., 2017)

The three flows of compassion were assessed using this 39-item measure with three scales; ‘self-compassion’ (CEAS-SC; i.e., “I am accepting, non-critical and non-judgemental of my feelings of distress”), ‘compassion towards others’ (CEAS-CtO; i.e., “I am accepting, non-critical and non-judgemental of other people’s distress”), and ‘compassion from others’ (CEAS-CfO; i.e., “Others are accepting, non-critical and non-judgemental of my feelings of distress”). Participants rated each item on a 10-point likert scale ranging from ‘0’ (never) to ‘10’ (always), with higher scores indicating greater agreement with the statement. Higher subscale scores indicate higher levels of compassion. The total subscale score for each flow was used in this study. In the original study, this measure was found to show both good reliability and validity, with good internal consistency across subscales (α = 0.74 to 0.94; Gilbert et al., 2017). The CEAS

¹ All measures except for the ‘demographic information questionnaire’ and ‘additional likert-scale questions’ are freely available online.
² Although eligibility questions were part of the demographic information questionnaire, they are presented separately in Appendix H for clarity.
³ The “Compassionate Engagement and Action Scales” (CEAS) is also referred to as the “Compassionate Attributes and Action Scales” (CAAS) within some literature.
demonstrated good internal consistency in the current study ($\alpha = 0.82$ for CEAS-SC, 0.87 for CEAS-CtO, and 0.94 for CEAS-CfO). See Appendix J for full measure.

2.2.5.3 Copenhagen Burnout Inventory (CBI; Kristensen et al., 2005)

Burnout was measured using this 19-item measure with three subscales for each area of burnout: ‘personal burnout’ (PBO) measuring “the degree of physical and psychological fatigue and exhaustion experienced by the person” (i.e., “how often do you feel worn out?”), ‘work-related burnout’ (W-RBO) measuring “the degree of physical and psychological fatigue and exhaustion that is perceived by the person as related to his/her work” (i.e., “do you feel worn out at the end of the working day?”), and ‘client-related burnout’ (C-RBO) measuring “the degree of physical and psychological fatigue and exhaustion that is perceived by the person as related to his/her work with clients” (i.e., “do you find it hard to work with clients?”). Participants rated each item on a 5-point likert scale ranging from ‘0’ (to a very low degree / never) to ‘100’ (to a very high degree / always), with higher scores indicating greater agreement with the statement. Higher subscale scores indicate higher levels of burnout. In the original study, this measure was found to show high internal reliability across subscales ($\alpha = 0.85$ to 0.87) and good validity (Kristensen et al., 2005). Based on Atkinson et al. (2017), a total burnout score (TBO) was also calculated by the overall mean across subscales. The CBI demonstrated good internal consistency in the current study ($\alpha = 0.84$ for PBO, 0.85 for W-RBO, 0.86 for C-RBO, and 0.89 for TBO). See Appendix K for full measure.

2.2.5.4 Forms of Self-Criticising/Attacking and Self-Reassuring Scale (FSCRS; Gilbert, Clark, Hempel, Miles, & Irons, 2004)

Self-criticism (SC) was assessed using this 22-item measure with three subscales (of which two are forms of self-criticalness) measuring the different ways individuals think and feel about themselves when things go wrong for them; ‘inadequate-self’ measuring the
sense of personal inadequacy (i.e., “I am easily disappointed with myself”), ‘hated-self’ measuring the desire to persecute or hurt the self (i.e., “I have a sense of disgust with myself”), and ‘reassured self’ measuring ability to self-reassure (i.e., “I am gentle and supportive with myself”). Participants rated each item on a 5-point likert scale, ranging from ‘0’ (not at all like me) to 4 (extremely like me), with higher scores indicating greater agreement with the statement. Higher scores indicate higher levels of that subscale. A total self-criticism score was used in this study by combining the two self-criticalness subscales. Several replication studies support the reliability of this measure (for example, Baião, Gilbert, McEwan, & Carvalho, 2014; Castilho, Pinto-Gouveia, & Duarte, 2015; Kupeli, Chilcot, Schmidt, Campbell, & Troop, 2013), with good internal consistency across subscales ($\alpha = 0.86$ to $0.90$). This measure demonstrated good internal consistency in the current study ($\alpha = 0.91$ for SC). See Appendix L for full measure.

2.2.5.5 Depression, Anxiety and Stress Scale (DASS-21; Lovibond & Lovibond, 1995)

Depression, anxiety and stress were assessed using this 21-item measure with three subscales designed to measure the emotional states of ‘depression’ (DASS-D; i.e., “I felt down-hearted and blue”), ‘anxiety’ (DASS-A; i.e., “I felt I was close to panic”) and ‘stress’ (DASS-S; i.e., “I tended to over-react to situations”). Participants rated each item on a 4-point likert scale, ranging from ‘0’ (did not apply to me at all) to ‘3’ (applied to me very much or most of the time), with higher scores indicating greater agreement with the statement. Higher scores indicate higher levels of that subscale. The DASS-21 is considered to have good reliability and validity across cultures (Oei, Sawang, Goh, & Mukhtar, 2013) and good internal consistency ($\alpha = 0.87$ to $0.94$; Antony et al. (1998). The DASS-21 demonstrated good internal consistency in the current study ($\alpha = 0.89$ for DASS-D, 0.82 for DASS-A, and 0.84 for DASS-S). See Appendix M for full measure.
2.2.5.6 Additional likert-scale questions

11 questions were developed by the main researcher for the intervention group to complete at ‘post-intervention’ regarding their personal experiences of the brief-CMT intervention to explore its accessibility and feasibility. Four further questions were developed for the intervention group to complete at ‘follow-up’ to explore the longevity of the intervention. Consultation and feedback was gained from two mental healthcare professionals regarding wording of questions. Participants rated each question on 7-point likert scale, ranging from ‘strongly disagree’ to ‘strongly agree’ with the statement. See Appendix N for full list.

2.2.6 Intervention

The brief CMT intervention used in the current study was informed by an English version of the psychoeducational booklet and CMT scripts originally designed for the two-week CMT-intervention used by Matos et al. (2017). The CMT scripts included the following practices:

1. Postures & Facial Expressions and Vocal Tones (PFEVT)
2. Mindfulness (M)
3. Soothing Rhythm Breathing (SRB)
4. Building and Cultivating Your Compassionate Self (BCYCS)
5. Compassion for a Close Person (CCP)
6. Compassion for the Self (CFTS)

In the current study, all the materials were converted into audio recordings to be accessed by participants as an online brief-CMT intervention. These recordings were spread out over two weeks, and the practices did not last longer than 30 minutes each evening; although participants were able to practice for longer if they wished (see Table 5 for the schedule of practices over the two weeks). The software Qualtrics (Version June,
Table 5

*Schedule of Practices Over the Two-Week Intervention Informed by Matos et al.’s (2017) Study Manual*

<table>
<thead>
<tr>
<th>Day 1 – Psychoeducation</th>
<th>Day 8 – CFTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 2 – PFEVT and SRB</td>
<td>Day 9 – BCYCS</td>
</tr>
<tr>
<td>Day 3 – M and PFEVT</td>
<td>Day 10 – CCP</td>
</tr>
<tr>
<td>Day 4 – SRB and M</td>
<td>Day 11 – CFTS</td>
</tr>
<tr>
<td>Day 5 – Psychoeducation</td>
<td>Day 12 – BCYCS</td>
</tr>
<tr>
<td>Day 6 – BCYCS</td>
<td>Day 13 – CCP</td>
</tr>
<tr>
<td>Day 7 – CCP</td>
<td>Day 14 – CFTS</td>
</tr>
</tbody>
</table>

*Note. PFEVT = Postures and Facial Expressions and Vocal Tones; SRB = Soothing Rhythm Breathing; M = Mindfulness; BCYCS = Building and Cultivating Your Compassionate Self; CCP = Compassion for a Close Person; CFTS = Compassion for the Self.*

2.2.7 Procedure

Recruitment was conducted in partnership with a local collaborator within each participating NHS-Trust and non-NHS organisations. Local collaborators supported the dissemination of the study advertisement either via a monthly email to their respective Trust/organisation, via their social media accounts and/or via word of mouth. The main
researcher disseminated the study advertisement via email to university students studying a mental health course with patient contact. See Appendix O for study flow chart.

Once professionals interested in participating followed the link within the study advertisement (see Appendix P), they were presented with the online participant information sheet highlighting further details about the study and consent statement to opt-in to participate in Part A of the study (see Appendix F for the online participant information sheet and consent statement). Following consent, the participants answered two screening questions to confirm their eligibility to participate in the study (see Appendix H). Those who did not meet the eligibility criteria were not able to proceed with the study, although were given access a copy of the intervention (without the measures included) via an automatic email.

2.2.7.1 Part A – Baseline Phase

Once eligibility was confirmed, participants completed the demographic information measure and the other measures in the following order (CEAS, CBI, FSCRS, DASS-21) to provide the ‘baseline’ data. Participants then had the option to either end their participation at this stage or to continue onto Part B of the study by providing consent (see Appendix F). If consent for Part B was not given, participants were debriefed (see Appendix Q) and they were able to enter an online prize draw, by entering their email address, to win one of six £25 Amazon gift vouchers as a ‘thank you’ for their participation. These participants also had access to a copy of the intervention (without measures included) via a link within the debrief form.

2.2.7.2 Part B – Intervention Phase

Following consent, participants were randomised into either the ‘intervention’ or ‘waitlist control’ group by the Qualtrics software. Participants in the intervention group were asked to engage with the CMT practices daily for two weeks as highlighted in Table
5. These participants received automatic daily email reminders to practice and to increase response rate. The waitlist control group were informed that they would be able to access the intervention after completing the measures again on two more occasions.

After the two-week intervention period, all participants received an automatic email via the Qualtrics software with a link to complete the measures again (‘post-intervention’). The participants in the intervention group also completed the additional Likert-scale questions. All participants were informed they would receive another email in two weeks to complete the final measures (‘follow-up’). The participants in the intervention group also completed the additional Likert-scale questions at ‘follow-up’. Once ‘follow-up’ measures were completed, all participants were debriefed via the online debriefing statement and were able to enter the prize draw. Participants in the waitlist control group had access to a version of the intervention (without measures included) via the link in the debrief form. The draw for the six £25 Amazon vouchers was conducted at the end of the study period and winners were contacted via email.

2.3 Results

2.3.1 Statistical Analyses

Statistical analyses were conducted using SPSS Version 26; data was directly exported from Qualtrics to SPSS. Preliminary checks recommended by Field (2018) were conducted to check assumptions were met for each analysis conducted; all assumptions were assumed, unless otherwise stated. Severe positive skews within the DASS-D and DASS-A subscales were transformed via square root transformations (Field, 2018). Two outliers were considered extreme (i.e., three standard deviations from the means). One extreme was accounted for by the transformation, and the other was replaced with the next
highest score plus one. One outlier was not removed/transformed as it was considered to represent a real phenomenon within the data.

Pearson’s correlations were conducted to analyse baseline associations between the variables. To explore the impact of the brief-CMT intervention, repeated measures MANOVA’s were conducted, with two conditions (intervention vs. waitlist control group) as the between-group factors, and time (i.e., baseline vs. post-intervention vs. follow-up) as the within-group factor. Significant MANOVA’s were followed-up with separate univariate ANOVA’s. Where significant time x group interactions were found, these were followed up with simple effects analyses comparing the intervention and waitlist control group at each time point. As the sample size between the two groups differed, the Wilks’ Lambda statistic was used (Field, 2018). Sphericity was not assumed, therefore Huynh-Feldt corrections were applied.

2.3.2 Part A – Baseline Phase

2.3.2.1 Participant characteristics

In total, 205 participants completed ‘baseline’ measures and were included in the correlational analyses for hypotheses one and two (see Table 4 for participant characteristics). Means, standard deviations and correlation statistics are presented in Table 6.

2.3.2.2 Hypothesis one

Hypothesis: At baseline, mental healthcare professionals with lower levels of compassion to self, towards others and from others will be associated with higher levels of all three areas of burnout (personal, client-related and work-related) and self-criticism.

4 The MANOVA’s were initially run as ANCOVA’s to control for depression, anxiety and stress as covariates, however this did not change the conclusions made, therefore MANOVA’s are reported for simplicity.
Analyses revealed significant negative associations between CEAS-SC ($M = 63.74, SD = 11.1$) and PBO ($M = 54.45, SD = 16.89$), $r = -.428, p < .001$, W-RBO ($M = 51.88, SD = 17.59$), $r = -.360, p < .001$, C-RBO ($M = 39.74, SD = 18.38$), $r = -.367, p < .001$, and SC ($M = 23.22, SD = 10.9$), $r = -.452, p < .001$. The effect sizes are all medium, and the results suggest that, at baseline, healthcare professionals with lower levels of self-compassion had significantly higher levels of all three areas of burnout and self-criticism.

Analyses revealed a significant negative association between CEAS-CtO ($M = 81.31, SD = 9.527$) and C-RBO, $r = -.237, p = .001$. The effect size is small, and the results suggest that, at baseline, healthcare professionals with lower levels of compassion towards others had significantly higher levels of client-related burnout, but not personal or work-related burnout or self-criticism.

Analyses also revealed significant negative associations between CEAS-CfO ($M = 61.31, SD = 15.57$) and PBO, $r = -.221, p = .001$, W-RBO, $r = -.316, p < .001$, and C-RBO, $r = -.268, p < .001$. The effect sizes are all small to medium, and the results suggest that, at baseline, healthcare professionals with lower levels of openness to receiving compassion from others, had significantly higher levels of all three areas of burnout but not self-criticism.

### 2.3.2.3 Hypothesis two

Hypothesis: At baseline, mental health professionals with higher levels of all three areas of burnout (personal, client-related and work-related) will be associated with higher levels of self-criticism, depression, anxiety and stress.

Analyses revealed significant positive associations between PBO and SC, $r = .449, p < .001$, DASS-D ($M = 2.12, SD = 1.06$), $r = .598, p < .001$, DASS-A ($M = 1.6, SD = 1.07$), $r = .464, p < .001$, and DASS-S ($M = 7.78, SD = 4.23$), $r = .614, p < .001$. The effect sizes are all medium to large, and the results suggest that, at baseline, healthcare
professionals with higher levels of personal burnout had higher levels of self-criticism, depression, anxiety and stress.

Analyses revealed significant positive associations between W-RBO and SC, \( r = .380, p < .001 \), DASS-D, \( r = .634, p < .001 \), DASS-A, \( r = .499, p < .001 \), and DASS-S, \( r = .619, p < .001 \). Effect sizes are all medium to large, and the results suggest that, at baseline, healthcare professionals with higher levels of work-related burnout had higher levels of self-criticism, depression, anxiety and stress.

Analyses also revealed significant positive associations between C-RBO and SC, \( r = .281, p < .001 \), DASS-D, \( r = .425, p < .001 \), DASS-A, \( r = .322, p < .001 \), and DASS-S, \( r = .408, p < .001 \). Effect sizes are all small to medium, and the results suggest that, at baseline, healthcare professionals with higher levels of client-related burnout had higher levels of self-criticism, depression, anxiety and stress.
**Table 6**

*Baseline Means, Standard Deviations, and Correlation Statistics for Parametric Bivariate Correlations*

<table>
<thead>
<tr>
<th>Measure</th>
<th>M (SD)</th>
<th>CEAS-SC</th>
<th>CEAS-CtO</th>
<th>CEAS-Cfo</th>
<th>PBO</th>
<th>W-RBO</th>
<th>C-RBO</th>
<th>SC</th>
<th>DASS-D</th>
<th>DASS-A</th>
<th>DASS-S</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEAS-SC</td>
<td>63.74 (11.9)</td>
<td>1</td>
<td>.211**</td>
<td>.323**</td>
<td>-.428**</td>
<td>-.360**</td>
<td>-.367**</td>
<td>-.452**</td>
<td>-.378**</td>
<td>-.135</td>
<td>-.329**</td>
</tr>
<tr>
<td>CEAS-CtO</td>
<td>81.31 (9.53)</td>
<td>1</td>
<td>.262**</td>
<td>.040</td>
<td>-.024</td>
<td>-.237**</td>
<td>.090</td>
<td>.027</td>
<td>.003</td>
<td>.084</td>
<td></td>
</tr>
<tr>
<td>CEAS-Cfo</td>
<td>61.31 (15.57)</td>
<td>1</td>
<td>-.221**</td>
<td>-.316**</td>
<td>-.268**</td>
<td>-.125</td>
<td>-.288**</td>
<td>-.057</td>
<td>-.184**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PBO</td>
<td>57.45 (16.89)</td>
<td>1</td>
<td>.836**</td>
<td>.581**</td>
<td>.449**</td>
<td>.598**</td>
<td>.464**</td>
<td>.614**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W-RBO</td>
<td>51.88 (17.59)</td>
<td>1</td>
<td>.717**</td>
<td>.380**</td>
<td>.634**</td>
<td>.499**</td>
<td>.619**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C-RBO</td>
<td>39.74 (17.97)</td>
<td>1</td>
<td>.281**</td>
<td>.425**</td>
<td>.322**</td>
<td>.408**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SC</td>
<td>23.22 (10.9)</td>
<td>1</td>
<td>.537**</td>
<td>.287**</td>
<td>.470**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DASS-D</td>
<td>2.12 (1.06)</td>
<td>1</td>
<td>.503**</td>
<td>.613**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DASS-A</td>
<td>1.6 (1.07)</td>
<td>1</td>
<td>.608**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DASS-S</td>
<td>7.78 (4.23)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. M = Mean; SD = Standard Deviation; CEAS-SC = Self-Compassion; CEAS-CtO = Compassion towards Others; CEAS-Cfo = Compassion from Others; PBO = Personal Burnout; W-RBO = Work-Related Burnout; C-RBO = Client-Related Burnout; SC = Self-Criticism; DASS-D = Depression; DASS-A = Anxiety; DASS-S = Stress.*

**Correlation significant at the 0.01 level (2-tailed).
2.3.2.4 Exploratory analyses

2.3.2.4.1 Predicting burnout

A multiple linear regression was conducted to explore whether the three flows of compassion (CEAS-SC, CEAS-CtO, and CEAS-CfO) and self-criticism (SC) predicted total burnout (TBO) in the 205 mental healthcare professionals who completed measures at baseline. The overall regression model was significant, $R^2 = .272$, $F(4, 200) = 18.66^{***}$, $p < .001$, with higher levels of self-criticism predicting higher levels of total burnout over and above the three flows of compassion. The model accounted for 27.2% of variance in level of total burnout. Lower levels of self-compassion and compassion from others also significantly predicted a higher level of total burnout, but not compassion towards others. See Table 7 for results.

Table 7

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE B</th>
<th>B</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEAS-SC</td>
<td>-.32</td>
<td>.1</td>
<td>-.236**</td>
<td>[53.49, 91.35]</td>
</tr>
<tr>
<td>CEAS-CtO</td>
<td>-.02</td>
<td>.11</td>
<td>-.009</td>
<td>[-.051, -.12]</td>
</tr>
<tr>
<td>CEAS-CfO</td>
<td>-.19</td>
<td>.01</td>
<td>-.188**</td>
<td>[-.23, .20]</td>
</tr>
<tr>
<td>SC</td>
<td>.41</td>
<td>.1</td>
<td>.279***</td>
<td>[-.32, -.06]</td>
</tr>
</tbody>
</table>

*Note: CEAS-SC = Self-Compassion; CEAS-CtO = Compassion towards Others; CEAS-CfO = Compassion from Others; SC = Self-Criticism.*

**$p < .01$, ***$p < .001$.

2.3.3 Part B – Intervention Phase

2.3.3.1 Participant characteristics

In total, 28 participants completed baseline and post-intervention data in the intervention group and 40 participants in the waitlist control group. Of those, 20
participants completed all three time points in the intervention group and 27 in the waitlist control group. The participants did not differ at baseline in measures of depression, anxiety and stress (see Table 4). Participants’ mean ratings for how well they were able to engage with the intervention ranged between 3 and 4 (1 = ‘not very well’, 5 = ‘very well’), indicating participants on average were able to engage well with the daily practices (see Figure R1 in Appendix R for a breakdown of daily ratings). Due to some participants completing measures at ‘follow-up’ but not ‘post-intervention’ and vice versa, separate MANOVA’s were conducted.

Mean scores, standard deviations and statistics for baseline and post-intervention data are reported in Table 8, and for baseline, post-intervention and follow-up data are reported in Table 9.

### 2.3.3.2 Hypothesis three

Hypothesis: Mental healthcare professionals in the intervention condition will report significantly higher levels of the three flows of compassion (to self, *towards* others and *from* others) and significantly lower levels of self-criticism post-intervention, compared to the wait-list control group. These changes will be maintained at follow-up.

Using the Wilks’ Lambda statistic, the MANOVA conducted on the baseline and post-intervention data revealed a significant time x group interaction effect, $\Lambda = .662$, $F(4,63) = 8.046, p < .001, \eta^2 p = .338$, and a significant main effect of time, $\Lambda = .703$, $F(4,63) = 6.646, p < .001, \eta^2 p = .297$, on levels of self-compassion, compassion *towards* others, compassion *from* others and self-criticism. The main effect of group was not significant. Univariate ANOVA’s$^5$ (see Table 8) revealed significant time x group

$^5$ Due to homogeneity of variance not assumed for some variables, the stricter alpha level of $p < .001$ was used to evaluate all univariate ANOVA’s for hypothesis four; as recommended by Allan and Bennett (2008) to account for this.
interaction effects on CEAS-SC and CEAS-CfO and a significant main effect of time on CEAS-SC; although trending towards significance, the time x group interaction effect on SC was not significant at the adjusted $p < .001$ level. Simple effects analyses revealed that the intervention group had a significantly higher mean level ($M = 67.93, SD = 11.41$) of CEAS-CfO than the waitlist-control group ($M = 58, SD = 17.45$) at post-intervention. There were no other significant simple effects analyses. This suggests the only flow of compassion significantly different from the control group post-intervention was openness to receiving compassion from others.

The MANOVA conducted on the baseline, post-intervention and follow-up data showed a significant time x group interaction effect, $\Lambda = .485, F(8,38) = 5.041, p < .001$, $\eta^2 p = .515$, and a significant main effect of time, $\Lambda = .455, F(8,38) = 5.698, p < .001$, $\eta^2 p = .545$. The main effect of group was not significant. Univariate ANOVA’s (see Table 9) revealed significant time x group interaction effects and significant main effects of time on both CEAS-SC and CEAS-CfO; although trending significance, the time x group interaction effect on SC was not significant at the adjusted $p < .001$ level. The only significant simple effects analysis was that the intervention group had a significantly higher mean level of CEAS-CfO ($M = 68.15, SD = 10.30$) than the waitlist-control group ($M = 54.26, SD = 15.99$) at post-intervention. This suggests that openness to receiving compassion from others was significantly different from the control group at post intervention but not follow-up.

2.3.3.3 Hypothesis four

Hypothesis: Mental healthcare professionals in the intervention condition will report significantly lower levels of all three areas of burnout (personal, client-related and work-related) post-intervention, compared to the wait-list control group. These changes will be maintained at follow-up.
Using the Wilks’ Lambda statistic, the MANOVA conducted on the baseline and post-intervention data showed there was a significant time x group interaction effect, $\Lambda = .787$, $F(3,64) = 5.775$, $p = .001$, $\eta^2 p = .213$, and a significant main effect of time, $\Lambda = .718$, $F(3,64) = 8.372$, $p < .001$, $\eta^2 p = .282$, on levels of personal burnout, work-related burnout and client-related burnout. The main effect of group was not significant. Univariate ANOVA’s (see Table 8) revealed significant time x group interaction effects on PBO and W-RBO. ANOVA’s also revealed significant main effects of time on PBO, W-RBO, and C-RBO. Simple effects analyses revealed that the intervention group had significantly lower mean levels of PBO ($M = 43.01$, $SD = 16.82$) and W-RBO ($M = 42.22$, $SD = 15.46$) than the waitlist-control group ($M = 54.17$, $SD = 17.5$; $M = 53.57$, $SD = 19.17$, respectively) at post-intervention. This suggests that the intervention significantly affected burnout with changes in mean levels of personal and work-related burnout which were significantly different from the control group post-intervention.

The overall MANOVA conducted on the baseline, post-intervention and follow-up data showed a significant main effect of time, $\Lambda = .613$, $F(6,40) = 4.218$, $p = .002$, $\eta^2 p = .387$, and a significant main effect of group $\Lambda = .829$, $F(3,43) = 2.947$, $p = .043$, $\eta^2 p = .171$. The time x group interaction effect was not significant. Separate univariate ANOVA’s on the variables (see Table 9) revealed a significant time x group interaction effect on PBO. ANOVA’s revealed significant main effects of time on PBO and W-RBO, and significant main effects of group on PBO, W-RBO, and C-RBO. Simple effects analyses revealed that the intervention group only had significantly lower mean levels of PBO ($M = 40.63$, $SD = 17.36$) than the waitlist-control group ($M = 56.48$, $SD = 17.65$) at both post-intervention and follow-up ($M = 40.63$, $SD = 13.64$; $M = 54.63$, $SD = 21.04$, respectively). This suggests the intervention affected burnout with changes in mean levels of personal, work-related and client-related burnout relative to the waitlist control group, however only personal burnout
was significantly different from the control group at both post intervention and at follow-up.

2.3.3.4 Hypothesis five

Hypothesis: Mental healthcare professionals in the waitlist control condition will show no significant difference in levels of the three flows of compassion (to self, towards others, and from others) or self-criticism across any of the time points.

Following the MANOVA’s conducted for hypothesis three, which revealed significant time x group interactions for CEAS-SC, CEAS-CfO and SC, follow-up simple effects analyses were conducted to explore any differences in scores across time for the waitlist-control group.

Simple effects analyses conducted on the baseline and post-intervention data revealed that the waitlist control group had significantly lower mean levels of CEAS-CfO at post intervention ($M = 58, SD = 17.45$) compared to baseline ($M = 63.2, SD = 16.37$), $t(66) = 2.73, p = .008, 95\%CI [1.4, 9], d = 0.25$. There were no other significant differences in means (see Table 8 for M/SD’s). This suggests that the mean level of openness to compassion from others significantly differed across time points among mental healthcare professionals in the waitlist control group.

Simple effects analyses conducted on the baseline, post-intervention and follow-up data revealed that the waitlist control group had a significantly higher mean level of CEAS-SC at follow-up ($M = 70.81, SD = 15.37$) compared to post-intervention ($M = 67.59, SD = 11.31$), $t(45) = 2.54, p = .015, 95\%CI [0.66, 5.78], d = 0.24$. Analyses revealed significantly higher mean levels of CEAS-CfO at baseline ($M = 59.56, SD = 16.47$), compared to post-intervention ($M = 54.26, SD = 15.99$), $t(45) = 2.36, p = .023, 95\%CI [0.78, 9.82], d = 0.33$, and significantly higher levels of CEAS-CfO at follow-up ($M = 61.81, SD = 17.38$, compared to post-intervention, $t(45) = 3.95, p < .001, 95\%CI [3.7,
11.41, $d = 0.45$. There were no other significant differences in means (see Table 9 for M/SD’s). This suggests that mean levels of self-compassion and openness to compassion from others significantly differed across time points among mental healthcare professionals in the waitlist control group.
Table 8

Means, Standard Deviations and Statistics for Both Intervention (n = 28) and Waitlist Control (n = 40) Groups at Baseline and Post-Intervention

<table>
<thead>
<tr>
<th>Measure</th>
<th>Interaction (Time X Group)</th>
<th>Time</th>
<th>Group</th>
<th>Baseline Group M(SD)</th>
<th>Intervention Group M(SD)</th>
<th>Post- Intervention Group M(SD)</th>
<th>Simple effects analyses</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEAS-SC</td>
<td>$F(1,66) = 12.7, p = .001, \eta^2 p = .161$</td>
<td>$F(1,66) = 22.05, p &lt; .001, \eta^2 p = .250$</td>
<td>$F(1,66) = 11.1, p = .739, \eta^2 p = .002$</td>
<td>62.68 (10.29)</td>
<td>67.10 (12.31)</td>
<td>$t(66) = 1.56, p = .124, 95% CI [-10.09, 1.25], d = 0.39$</td>
<td>70.89 (8.18)</td>
</tr>
<tr>
<td>CEAS-CtO</td>
<td>$F(1,66) = 0.3, p = .876, \eta^2 p = .000$</td>
<td>$F(1,66) = 1.31, p = .253, \eta^2 p = .020$</td>
<td>80.18 (8.06)</td>
<td>82.20 (8.52)</td>
<td>79.25 (7.93)</td>
<td>81.58 (9.44)</td>
<td>$t(66) = 1.52, p = .14, 95% CI [-11.58, 3.18], d = 0.29$</td>
</tr>
<tr>
<td>CEAS-SC</td>
<td>$F(1,66) = 22.71, p &lt; .001, \eta^2 p = .256$</td>
<td>$F(1,66) = 22.05, p &lt; .001, \eta^2 p = .250$</td>
<td>$F(1,66) = 0.7, p = .406, \eta^2 p = .010$</td>
<td>59 (12.77)</td>
<td>63.20 (16.37)</td>
<td>$t(66) = 1.14, p = .26, 95% CI [-11.58, 3.18], d = 0.29$</td>
<td>67.93 (11.41)</td>
</tr>
<tr>
<td>SC</td>
<td>$F(1,66) = 6.41, p = .014, \eta^2 p = .089$</td>
<td>$F(1,66) = 0.7, p = .799, \eta^2 p = .001$</td>
<td>23.71 (8.60)</td>
<td>21.13 (11.07)</td>
<td>20.75 (8.56)</td>
<td>22.13 (11.15)</td>
<td>$t(66) = 1.04, p = .303, 95% CI [-2.4, 7.57], d = 0.26$</td>
</tr>
<tr>
<td>PBO</td>
<td>$F(1,66) = 15.12, p &lt; .001, \eta^2 p = .186$</td>
<td>$F(1,66) = 24.32, p &lt; .001, \eta^2 p = .269$</td>
<td>$F(1,66) = 2.76, p = .101, \eta^2 p = .040$</td>
<td>53.57 (15.2)</td>
<td>55.42 (16.48)</td>
<td>$t(66) = .47, p = .64, 95% CI [-9.7, 6.01], d = 0.12$</td>
<td>43.01 (16.82)</td>
</tr>
<tr>
<td>C-RBO</td>
<td>$F(1,66) = 1.52, p = .222, \eta^2 p = .022$</td>
<td>$F(1,66) = 6.05, p = .017, \eta^2 p = .084$</td>
<td>$F(1,66) = .36, p = .551, \eta^2 p = .005$</td>
<td>40.33 (19.28)</td>
<td>40.73 (15.89)</td>
<td>34.38 (14.77)</td>
<td>38.75 (19.18)</td>
</tr>
<tr>
<td>W-RBO</td>
<td>$F(1,66) = 8.19, p &lt; .006, \eta^2 p = .110$</td>
<td>$F(1,66) = 14.4, p &lt; .001, \eta^2 p = .179$</td>
<td>$F(1,66) = 3.71, p = .058, \eta^2 p = .053$</td>
<td>50.51 (16.57)</td>
<td>54.73 (16.58)</td>
<td>$t(66) = -1.03, p = .31, 95% CI [-12.38, 3.93], d = 0.25$</td>
<td>42.22 (15.46)</td>
</tr>
</tbody>
</table>

Note. CEAS-SC = Self-Compassion; CEAS-CtO = Compassion towards Others; CEAS-CrO = Compassion from Others; SC = Self-Criticism; PBO = Personal Burnout; C-RBO = Client-Related Burnout; W-RBO = Work-Related Burnout.
### Table 9

Statistics for Both Intervention (n = 20) and Waitlist Control (n = 27) Groups at Baseline, Post-Intervention and Follow-Up

<table>
<thead>
<tr>
<th>Measure</th>
<th>Interaction (Time X Group)</th>
<th>Time</th>
<th>Group</th>
<th>Intervention Group M(SD)</th>
<th>Waitlist Control Group M(SD)</th>
<th>Simple effects analyses</th>
<th>Post-Intervention</th>
<th>Intervention Group M(SD)</th>
<th>Waitlist Control Group M(SD)</th>
<th>Simple effects analyses</th>
<th>Follow-up</th>
<th>Intervention Group M(SD)</th>
<th>Waitlist Control Group M(SD)</th>
<th>Simple effects analyses</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEAS-SC</td>
<td>$F(1.87,84.16) = 14.54, p &lt; .001$</td>
<td>Baseline</td>
<td>Intervention Group</td>
<td>62.20</td>
<td>68.26</td>
<td>$t(45) = -1.83, p = .073, 95% CI [-12.72, .6], d = 0.54$</td>
<td>Post-Intervention</td>
<td>Intervention Group</td>
<td>72.05</td>
<td>67.59</td>
<td>$t(45) = 1.54, p = .13, 95% CI [-1.37, 10.28], d = 0.47$</td>
<td>Follow-up</td>
<td>Intervention Group</td>
<td>74.95</td>
</tr>
<tr>
<td>CEAS-CtO</td>
<td>$F(2,90) = .11, p = .883, \eta^2_p = .003$</td>
<td></td>
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<tr>
<td>CEAS-CTO</td>
<td>$F(2,90) = 12.49, p &lt; .001$</td>
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<tr>
<td>SC</td>
<td>$F(1.776,533) = 4.27, p = .023, \eta^2_p = .087$</td>
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<tr>
<td>PBO</td>
<td>$F(2,90) = 4.49, p &lt; .014, \eta^2_p = .091$</td>
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<tr>
<td></td>
<td>C-RBO $F(1.93, 86.91)$</td>
<td>C-RBO $F(1, 45) = 33.94$</td>
<td>C-RBO $F(1.93, 86.91)$</td>
<td>C-RBO $F(1, 45) = 30$</td>
<td>W-RBO $F(1.84, 82.92)$</td>
<td>W-RBO $F(1, 45) = 47.14$</td>
<td>W-RBO $F(1.84, 82.92)$</td>
<td>W-RBO $F(1, 45) = 38.57$</td>
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<td>$\eta^2$</td>
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<td>$.026$</td>
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<td>$\eta^2 p$</td>
<td>$.005$</td>
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</table>

*Note.* CEAS-SC = Self-Compassion; CEAS-CtO = Compassion towards Others; CEAS-CfO = Compassion from Others; SC = Self-Criticism; PBO = Personal Burnout; C-RBO = Client-Related Burnout; W-RBO = Work-Related Burnout.
### 2.3.3.5 Accessibility and feasibility

The feedback from participants’ experiences of the brief-CMT, at post-intervention and at follow-up, was examined to explore the accessibility and feasibility of the intervention. At post-intervention, the majority of participants reported that they ‘mostly’ or strongly’ found the daily CMT practices accessible (72.4%) and feasible (65.5%) to do within the timeframe given, and that the instructions of the CMT practices were easy to adhere to (68.9%). At follow-up, the majority of participants (41.1%) reported they were ‘slightly’ able to continue to bring their compassionate self into their everyday life. Overall, this feedback supports the accessibility and feasibility of the brief-CMT intervention (See Table S1 in Appendix S for a breakdown of participant’s feedback).

### 2.4 Discussion

#### 2.4.1 Main Findings

This study aimed to explore the relationships between the three flows of compassion (compassion to self, towards others and from others), the three areas of burnout (personal, work-related and client-related), self-criticism, depression, anxiety and stress, specifically among mental healthcare professionals. The second aim was to explore the effectiveness of an online brief-CMT intervention on increasing the three flows of compassion and reducing the three areas of burnout and self-criticism in mental healthcare professionals. Previous research has explored baseline associations between compassion and burnout (Atkinson et al., 2017; Beaumont et al., 2015), and outlined a proposal to manage burnout using CMT (Beaumont & Hollins Martin, 2016). However, based on the author’s knowledge, this is the first study to attempt a randomised control trial to explore the feasibility and impact of CMT on burnout and self-criticism with this population. The findings are discussed in order of the hypotheses.
2.4.1.1 Part A – Baseline Phase

Hypothesis one was partially supported. Lower levels of self-compassion was associated with higher levels of all three areas of burnout and self-criticism. These findings support research by Atkinson et al. (2017) and Beaumont et al. (2015) who also found self-compassion to be inversely associated with burnout among mental healthcare professionals. These findings also support earlier research associating self-criticism with difficulties in accessing feelings of self-compassion (Gilbert & Procter, 2006; Gilbert, et al., 2008; Neff, 2003). Self-criticism was not significantly associated with the other two flows of compassion, which is not unexpected as self-criticism is considered the opposite of self-kindness, an element of self-compassion (Neff, 2003).

Lower levels of compassion towards others was only significantly associated with higher levels of client-related burnout, suggesting mental healthcare professionals may particularly find it more difficult to be compassionate towards patients, if they perceive their burnout to be due to their work with patients. Whilst, prior research has not separately considered the three areas of burnout (Kristensen et al., 2005), this finding is in line with research by Beaumont et al. (2016a) reporting a significant relationship between higher levels of total burnout and lower levels of compassion towards others among student counsellors. The current study suggests there may be a specific relationship between feelings of compassion towards others and burnout related to patients. This is not unexpected as mental healthcare professionals experience intense emotional involvement over long periods of time (Edwards & Burnard, 2003; Mann & Cowburn, 2005), and a continuous external flow of compassion towards others has been linked to burnout (Gilbert & Choden, 2013). Although these findings are cross-sectional, therefore causation cannot be inferred, this finding likely has implications for delivering compassionate care and further research is required to explore this association.
Lower levels of compassion from others significantly associated with higher levels of all three areas of burnout. This suggests healthcare professionals may be less open to receiving compassion from others when burnt out. Alternatively, it could be that healthcare professionals less open to receiving compassion and support from others may be more vulnerable to burnout. From a CFT/CMT approach (Gilbert, 2009; Gilbert & Irons, 2005), burnout has been related to the over-activation of the threat system and under-activation of the soothing system (Beaumont & Hollins-Martin, 2016; Henshall et al., 2018), and it has been theorised that being open to receiving compassion from others may actually reduce levels of distress experienced by activation of the soothing system (Gilbert, 2010; Irons & Beaumont, 2017). Therefore, it may be reasonable to posit the association found between lower levels of openness to compassion from others and higher levels of burnout may maintain the over-activation of the threat system among mental healthcare professionals working in challenging work environments.

Supporting hypothesis two, higher levels of all three areas of burnout were significantly positively associated with higher levels of self-criticism, depression, anxiety and stress. These findings are not surprising as research has often reported positive associations between burnout, depression and anxiety, with an overlap between their symptomology (Atkinson et al., 2017; Morse et al., 2012; Teater & Ludgate, 2014). These findings are also in line with research reporting associations between high levels of self-criticism and higher levels of burnout among mental healthcare professionals (Richardson et al., 2018; Skovholt & Trotter-Matchison, 2011). Interestingly, the regression analysis conducted revealed self-criticism most strongly predicted total burnout over and above the three flows of compassion, albeit closely followed by self-compassion and compassion from others, respectively. Self-criticism is considered an active defensive strategy in response to the activated threat system (Gilbert, 2005). It could be that mental healthcare professionals may experience burnout due to performance and outcome monitoring, often
seen in the NHS (Cole-King & Gilbert, 2011), thereby activating threat system, and try to manage this through self-criticism. However, it is important to also note, that there remained a large degree of unexplained variance in the final regression model. This could be reflective of other factors, not measured in this study, that are also associated with burnout, such as the aforementioned organisational and institutional factors (Cole-King & Gilbert, 2011; Kumar, 2016). Nonetheless, these findings highlight the importance of considering self-criticism when researching burnout among mental healthcare professionals and considering interventions.

2.4.1.2 Part B – Intervention Phase

The third hypothesis, predicting significant increases in all three flows of compassion and a reduction in self-criticism following the intervention, was partially supported as mental healthcare professionals only became significantly more open to receiving compassion from others. This difference was not maintained at follow-up, suggesting active participation in the CMT intervention may be helpful for more lasting effectiveness. It is notable that while self-criticism did not reach the adjusted significance level in the current study, it trended towards significance and the current study may not have had sufficient power to detect a significant effect. Interestingly, unlike the current findings, previous research has consistently found CMT interventions to increase all three levels of compassion and decrease self-criticism (i.e., Gilbert & Procter, 2006; Matos et al., 2017). There are a number of considerations that may explain the current findings. For example, Matos et al.’s (2017) study comprised a non-clinical population within the general community and students, who likely did not have the additional demands placed on them in highly pressured work environments, as in the case of mental healthcare professionals, to engage with a two-week intervention. The extent to which participants engaged with the intervention was not measured in the current study and, while most participants reported the intervention was feasible, these additional demands may have
impacted their ability to fully engage with the practices or how often they practiced. It would be helpful for future research to consider this.

It has been theorised that it may be easier to be compassionate towards others, followed by accepting compassion from others than developing self-compassion (Gilbert, 2010; Hermanto & Zuroff, 2016). The current findings suggest that among mental healthcare professionals, it may be more accessible to first open up to receive compassion from others, than themselves, which may explain the current findings. Interestingly, although there were no significant changes in compassion towards others, participants had higher mean levels of compassion towards others, compared to the other flows, both before and following the intervention. This suggests mental healthcare professionals may not experience difficulty with this flow and therefore this flow was not targeted by the intervention. Furthermore, regarding self-compassion, it is possible that the current brief-CMT did not sufficiently reduce self-criticism among this population, which may have been a barrier against participants’ enhancing their self-compassion, particularly as they negatively correlated at baseline. Indeed, self-criticism has been associated with difficulties in accessing feelings of self-compassion (Gilbert & Procter, 2006; Gilbert et al., 2008; Warren, Smeets, & Neff, 2016), as well as being a barrier to effective treatment outcomes (Warren et al., 2016). While there is currently no consensus on the most useful CMT practices, with variations in the literature (Beaumont et al., 2012; Gilbert & Procter, 2006; Matos et al., 2017; Mayhew & Gilbert, 2008), the current CMT practices primarily focused on enhancing the three flows of compassion. The findings of this study suggest it may also have been helpful to include a CMT practice specifically targeting self-criticism, to then enhance self-compassion. It would be helpful for future research to explore this further among mental healthcare professionals.

Partially supporting hypothesis four, following the intervention, there were significant reductions in personal and work-related, but not client-related burnout. It is
notable that mean levels of client-related burnout was lower than personal and work-related burnout across all time points, and this suggests client-related burnout may not be a difficulty for mental healthcare professionals, particularly as they also demonstrated higher levels of compassion towards others, compared to the other flows. Theoretical perspectives suggest CMT may be able to reduce burnout by activating the soothing system by enhancing the flows of compassion (Gilbert & Proctor, 2006). Cross-sectional research has suggested that self-compassion may be associated with greater resilience against burnout (Duarte et al., 2016; Durkin et al., 2016; Beaumont et al., 2016b; Olson et al., 2015). The current study does not support this as the only flow of compassion which significantly increased, alongside reductions in burnout, was compassion from others. This suggests the brief-CMT intervention may have had a positive impact on burnout through elevating mental healthcare professional’s openness to receiving compassion from others, which may support against burnout. This is in line with the evidence highlighting the calming effects of receiving care from others by activating the parasympathetic nervous system (Porges, 2007), which in turn inhibits the sympathetic nervous system associated with the threat system (Deupe & Morrone-Strupinsky, 2005).

An alternative way of explaining this finding could be through considering research on fears of compassion, which has been associated with barriers towards engaging in compassionate experiences and difficulties with receiving support from others when distressed (Gilbert, McEwan, Matos, & Rivis, 2011). Fears of compassion has also been associated with self-criticism (Hermanto et al., 2016). As previously discussed, at baseline, self-criticism was found to be the strongest predictor of burnout in this study. High self-criticism has been associated with difficulties receiving compassion from others as well as depression, anxiety and stress (Gilbert, et al., 2011), all of which were also found to be significantly associated with all three areas of burnout in the current study. Individuals high in self-criticism have been found to be fearful of receiving compassion from others.
(Gilbert et al., 2011), and the ability to be open to receiving compassion *from* others has been found to buffer against depression among highly self-critical individuals (Hermanto et al., 2016). While not reaching statistical significance, the mean levels of self-criticism reduced across time points. Based on the aforementioned evidence, it is tentatively suggested that participants may have opened up to receiving compassion *from* others due to the slight reductions in self-criticism, which may have then reduced burnout. Consequently, self-criticism may be a helpful target to consider for interventions reducing burnout among mental healthcare professionals. However, the limited research in this area and this study’s small sample size need to be considered when interpreting these findings. It will be helpful for future research to consider fears of compassion (Gilbert et al., 2011) and its potentially mediating role with self-criticism and burnout among this population.

Finally, contrary to hypothesis five, the waitlist control group exhibited significant changes in self-compassion and openness to compassion *from* others across time points. Compassion *towards* others was the only stable flow within this population and may be inherent among mental healthcare professionals. The current findings suggest compassionate qualities are not stable and fluctuate over time and may be influenced by various factors. Interestingly, Gilbert’s (2009, 2014) model places a large emphasis on the development of the soothing system and self-compassionate qualities on early affiliative interactions with primary caregivers, and may therefore overlook the influence of affiliative experiences beyond the primary caregiver, which may also promote self-soothing and compassionate qualities (Duarte & Pinot-Gouveia, 2017). Consequently, the development of self-compassionate qualities may not be solely dependent upon early attachment relationships (Matos & Pinto-Gouveia, 2014). It would be interesting for future research to consider other factors in one’s daily life that may influence fluctuations in compassionate qualities.
2.4.2 Strengths and limitations

A strength of the current study is, based on the author’s knowledge, it is the first to explore the accessibility, feasibility and impact of an online brief-CMT intervention using a RCT design, to reduce burnout and self-criticism in mental healthcare professionals. As an initial study, the findings encourage the implementation of brief online CMT interventions to reduce burnout. Furthermore, this study employed a measure of burnout, the CBI (Kristensen et al., 2005), which specifically examines the most consistent core feature of burnout across research (emotional exhaustion). While the Maslach Burnout Inventory (Maslach et al., 2001) is more commonly used, it has been criticised for potentially confounding its measure of emotional exhaustion with a coping strategy (depersonalisation) and consequences of burnout (reduced personal accomplishment; Atkinson et al., 2017; Kristensen et al., 2005). Additionally, the CBI does not assume burnout is a one dimensional construct, and distinguishes between three areas of burnout (Kristensen et al., 2005). The current study highlighted two specific areas that appears most relevant to mental healthcare professionals, which supports the development of more specifically targeted interventions to address burnout within this population.

However, while the results of the current study are promising, several limitations need to be acknowledged. First, the findings of this study may have been impacted by its small sample size and a larger sample may have had more power to detect other significant effects. Also, the sample consisted of self-selecting volunteers who may not be representative of all mental healthcare professionals. Participants were predominantly females, and research has shown that females tend to report lower levels of self-compassion than males (Yarnell et al., 2015). This means that the findings may not be generalisable to male mental healthcare workers. In addition, while Gilbert’s (2009) emotion regulation model is largely based on neurophysiological theory, relating the soothing system to activation of the parasympathetic nervous system, the current study did
not employ a physiological measure to objectively ascertain whether the CMT achieved the theorised neurophysiological effect on the soothing system. HRV is considered an ideal method of exploring the effectiveness of a CMT intervention (Kirby, Doty, Petrocchi, & Gilbert, 2017) and future research should consider HRV in addition to self-report measures, as an objective measure of the soothing system being activated (Porges, 2007). Furthermore, the current study did not measure how often practices were done and whether participants who practiced the CMT practices more had better outcomes, and it would be beneficial for future research to consider this. Lastly, it is notable that increased insight into the psychoeducational elements of compassion may enhance perceived helpfulness of CMT practices (Matos, Duarte, Duarte, Gilbert, & Pinto-Gouveia, 2018). Empirical evidence has shown that perceived helpfulness of CMT practices enhance participants’ capacity to direct compassion towards themselves and experience others as being compassionate (Matos et al., 2018). While Matos et al.’s (2017) intervention consisted of participants attending a two hour face-to-face psychoeducational session and provided a written manual for the practices, in the current study this psychoeducational information was significantly reduced to a 30 minute audio recording, to explore the feasibility of a brief online CMT intervention. Consequently, this may have reduced participants’ perceptions of the helpfulness of the practices which may have impacted their capacity to direct compassion towards themselves. However, the helpfulness of including the psychoeducational element in CMT interventions is yet to be explored, therefore it would be helpful for future research to explore this further (Matos et al., 2018).

2.4.3 Clinical Implications

The current study provides a number of clinical implications. First, it indicates that a brief-CMT intervention was considered feasible and accessible among mental healthcare professionals and the results show that it can effectively reduce burnout. While previous research has predominantly suggested that self-compassion may act as a buffer against
burnout by building resilience, the current study highlights the importance of considering openness to receiving compassion from others, which may support the development of more targeted interventions for burnout. The findings of this study also imply that it may be beneficial to target burnout alongside a number of potential co-morbidities such as self-criticism, depression, anxiety and stress. However, research in this area is currently in its infancy and further research is required to replicate and support these claims.

2.4.4 Conclusion

In summary, significant negative associations were found between self-compassion and compassion from others and all three areas of burnout. Burnout also positively associated with self-criticism, depression, anxiety and stress. The current study employed an RCT design and found an online brief-CMT intervention significantly enhanced openness to compassion from others and reduced levels of personal and work-related burnout among mental healthcare professionals. The current findings indicate that compassion towards others is may be inherent among mental healthcare professionals and that rather than client-related burnout, they more likely experience personal and work-related burnout. At baseline, self-criticism was both found to be the strongest predictor of total burnout, albeit closely followed by self-compassion and compassion from others, and also slightly reduced following the intervention. This suggests that self-criticism may be an important factor when considering interventions to reduce burnout in this population, alongside the flows of compassion. Due to rising levels of burnout and its impact on both the individual (such as depression and substance misuse), patients (such as impaired patient care and increased medical errors), and also the economy in terms of sick leave, it is important for research to consider ways to reduce burnout among mental healthcare professionals.
# Appendix A

**Individual Search Strategy (Syntax) for each Database**

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<thead>
<tr>
<th>Database</th>
<th>Search Syntax</th>
<th>Articles Returned</th>
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<tr>
<td>CINAHL Plus with Full Text (via EBSCO)</td>
<td>Self N1 compassion* AND &quot;compassion for other*&quot; OR &quot;compassion* to other*&quot; OR &quot;compassion* toward* other*&quot; OR &quot;compassion* care&quot; OR &quot;other-focused concern&quot; OR &quot;orientation of compassion&quot;</td>
<td>54</td>
</tr>
<tr>
<td>MEDLINE (via EBSCO)</td>
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<td>PsycINFO (via EBSCO)</td>
<td>Self N1 compassion* AND &quot;compassion for other*&quot; OR &quot;compassion* to other*&quot; OR &quot;compassion* toward* other*&quot; OR &quot;compassion* care&quot; OR &quot;other-focused concern&quot; OR &quot;orientation of compassion&quot;</td>
<td>108</td>
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<tr>
<td>PsycARTICLES (via EBSCO)</td>
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<tr>
<td>Web of Science</td>
<td>(&quot;self-compassion*&quot; OR &quot;self compassion*&quot; OR &quot;selfcompassion*&quot; OR &quot;compassionate-self&quot; OR &quot;compassion* to self&quot;) AND (&quot;compassion for other*&quot; OR &quot;compassion* to other*&quot; OR &quot;compassion* toward* other*&quot; OR &quot;compassion* care&quot; OR &quot;other-focused concern&quot; OR &quot;orientation of compassion&quot;)</td>
<td>79</td>
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<tr>
<td>EMBASE (via OVID)</td>
<td>(&quot;self-compassion*&quot; OR &quot;self compassion*&quot; OR</td>
<td>230</td>
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</table>
"selfcompassion*" OR "compassionate-self" OR "compassion* to self") AND ("compassion for other*" OR "compassion* to other*" OR "compassion* toward* other*" OR "compassion* care" OR "other-focused concern" OR "orientation of compassion")

ProQuest for Dissertations and Theses

“(self-compassion* OR (self compassion*)) OR “selfcompassion*” OR “compassionate-self” OR “compassion* to self”) AND ("compassion for other*" OR "compassion* to other*" OR "compassion* toward* other*" OR "compassion* care" OR "other-focused concern" OR "orientation of compassion")

The British Library

("self-compassion*" OR "self compassion*" OR "selfcompassion*" OR "compassionate-self" OR "compassion* to self") AND ("compassion for other*" OR "compassion* to other*" OR "compassion* toward* other*" OR "compassion* care" OR "other-focused concern" OR "orientation of compassion")

Cochrane Library

("self-compassion*" OR "self compassion*" OR "selfcompassion*" OR "compassionate-self" OR "compassion* to self") AND ("compassion for other*" OR "compassion* to other*" OR "compassion* toward* other*" OR "compassion* care" OR "other-focused concern" OR "orientation of compassion")

Note. The following Boolean operators were used. AND = to combine search terms and identify references containing all search terms entered; OR = to identify studies containing any of the search terms identified; N1 = to find both words together, either in order, or with one word between them.
### Appendix B  
**Reasons for Excluding Studies at Full-Text Screening Stage**

Table B1

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<thead>
<tr>
<th>Authors</th>
<th>Title</th>
<th>18+ Years Old Healthcare Professionals (both qualified and unqualified)</th>
<th>Written in English Empirical Study</th>
<th>Quantitative Study</th>
<th>Validated measures of both S-C and CfO</th>
<th>Findings Available</th>
<th>Includes quantitative analyses or relationship between S-C and CfO</th>
<th>Full Text Available</th>
<th>Duplicate</th>
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<td>Barratt (2017)</td>
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<td>Do Mindfulness and Self-Compassion Predict Burnout in Pediatric Residents?</td>
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<td>Oveis, Horberg, &amp; Keltner (2010)</td>
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<td>Compassion as a mediator between stressful events and perceived stress in Greek students</td>
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Note. S-C = Self-Compassion; CfO = Compassion for Others.
## Appendix C  Quality Assessment

Beaumont, Durkin, Hollins Martin, & Carson (2016a)

<table>
<thead>
<tr>
<th>Criteria</th>
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<th>No (0)</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Question/objective sufficiently described?</td>
<td>Yes clearly stated (p. 17 and abstract)</td>
<td></td>
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</tr>
<tr>
<td>2. Study design evident and appropriate?</td>
<td>Yes – rationale for correlational design given and appropriate</td>
<td></td>
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</tr>
<tr>
<td>3. Method of subject/comparison group selection or source of information/input variables are described and appropriate?</td>
<td>Partial - described and appropriate for study aims with no obvious inappropriateness. Although selection strategy not ideal – one course recruited from which may introduce bias</td>
<td></td>
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</tr>
<tr>
<td>4. Subject (and comparison group, if applicable) characteristics sufficiently described?</td>
<td></td>
<td></td>
<td>No demographic information described</td>
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</tr>
<tr>
<td>5. If interventional and random allocation to treatment group was possible, was it described?</td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>6. If interventional and blinding of investigators to intervention was possible, was it reported?</td>
<td></td>
<td></td>
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<td>N/A</td>
</tr>
<tr>
<td>No.</td>
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<td>Answer</td>
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<td>7.</td>
<td>If interventional and blinding of subjects was possible, was it reported?</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Outcome and (if applicable) exposure measure(s) well defined and robust to measurement / misclassification bias? Means of assessment reported?</td>
<td>Yes – all validated measures used</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Sample size appropriate?</td>
<td>Yes – although no reference to power analysis is made, sample size assumed appropriate given statistically significant results</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Analytic methods described/justified and appropriate?</td>
<td>Yes - analytic methods are reported in results and appropriate (p 18-18)</td>
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</tr>
<tr>
<td>11.</td>
<td>Some estimate of variance reported for the main results?</td>
<td>Partial – means, standard deviations are provided but no confidence intervals reported for t-tests.</td>
<td></td>
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</tr>
<tr>
<td>12.</td>
<td>Controlled for confounding?</td>
<td>N/A</td>
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<tr>
<td>13.</td>
<td>Results reported in sufficient detail?</td>
<td>Yes</td>
<td></td>
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<tr>
<td>14.</td>
<td>Conclusions supported by the results?</td>
<td>Partially – some overgeneralisation of findings but does refer to preliminary nature of the</td>
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</tr>
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</table>
Beaumont, Durkin, Hollins Martin, & Carson (2016b)

<table>
<thead>
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<td>1. Question/objective sufficiently described?</td>
<td>Yes (p. 241)</td>
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<tr>
<td>2. Study design evident and appropriate?</td>
<td>Yes – rationale for correlational design given and appropriate (p. 241)</td>
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<tr>
<td>3. Method of subject/comparison group selection or source of information/input variables are described and appropriate?</td>
<td>Partial - described and appropriate for study aims with no obvious inappropriateness. Although selection strategy not ideal – may introduce bias as recruited from in class</td>
<td></td>
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<tr>
<td>4. Subject (and comparison group, if applicable) characteristics sufficiently described?</td>
<td>Yes - age, gender and year of midwifery degree reported and seems sufficient for aims (p.241)</td>
<td></td>
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</tr>
<tr>
<td>5. If interventional and random allocation to treatment group was possible, was it described?</td>
<td></td>
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</table>

Total Score (summary quality score) 28 - (N/A x 4) = 28 - 8 = 20
15/20 (0.75)

study design/sample. Does not discuss negative findings.
<table>
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<tr>
<th></th>
<th>Question</th>
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<tr>
<td>6</td>
<td>If interventional and blinding of investigators to intervention was possible, was it reported?</td>
<td>N/A</td>
</tr>
<tr>
<td>7</td>
<td>If interventional and blinding of subjects was possible, was it reported?</td>
<td>N/A</td>
</tr>
<tr>
<td>8</td>
<td>Outcome and (if applicable) exposure measure(s) well defined and robust to measurement / misclassification bias? Means of assessment reported?</td>
<td>Yes – validated measures used and clearly reported</td>
</tr>
<tr>
<td>9</td>
<td>Sample size appropriate?</td>
<td>Yes – although no reference to power analysis is made, sample size assumed appropriate given statistically significant results</td>
</tr>
<tr>
<td>10</td>
<td>Analytic methods described/justified and appropriate?</td>
<td>Yes – analytic methods described and appropriate (p.241-242)</td>
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<tr>
<td>11</td>
<td>Some estimate of variance reported for the main results?</td>
<td>Partial – means, standard deviations are provided but no confidence intervals reported for t-tests.</td>
</tr>
<tr>
<td>12</td>
<td>Controlled for confounding?</td>
<td>N/A</td>
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<tr>
<td>13</td>
<td>Results reported in sufficient detail?</td>
<td>Yes</td>
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</tbody>
</table>
**14. Conclusions supported by the results?**  
Partially – conclusions are supported by results, although negative findings not discussed.

<table>
<thead>
<tr>
<th>Total Score (summary quality score)</th>
<th>28 - (N/A x 4) = 28 - 8 = 20</th>
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<tbody>
<tr>
<td></td>
<td><strong>17/20 (0.85)</strong></td>
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</table>


<table>
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<td>Yes (abstract)</td>
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<td>2. Study design evident and appropriate?</td>
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<td>3. Method of subject/comparison group selection or source of information/input variables are described and appropriate?</td>
<td>Partial - described and appropriate for study aims with no obvious inappropriateness (p.110-111). Although selection strategy not ideal – one course recruited from which may introduce bias</td>
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<td>4. Subject (and comparison group, if applicable) characteristics sufficiently described?</td>
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<td>5. If interventional and random allocation to treatment group was</td>
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<td>N/A</td>
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<tr>
<td><strong>possible, was it described?</strong></td>
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<td><strong>6. If interventional and blinding of investigators to intervention was possible, was it reported?</strong></td>
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<td><strong>7. If interventional and blinding of subjects was possible, was it reported?</strong></td>
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<td><strong>8. Outcome and (if applicable) exposure measure(s) well defined and robust to measurement / misclassification bias? Means of assessment reported?</strong></td>
<td>Yes – validated measures used and well defined (p.111)</td>
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<tr>
<td><strong>9. Sample size appropriate?</strong></td>
<td>Yes – although no reference to power analysis is made, sample size assumed appropriate given statistically significant results</td>
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<tr>
<td><strong>10. Analytic methods described/justified and appropriate?</strong></td>
<td>Yes – described/justified and appropriate to study aims (p.111)</td>
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<tr>
<td><strong>11. Some estimate of variance reported for the main results?</strong></td>
<td>Yes – means, standard deviations and effect sizes reported</td>
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<tr>
<td><strong>12. Controlled for confounding?</strong></td>
<td></td>
<td></td>
<td>N/A</td>
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<td><strong>13. Results reported in sufficient detail?</strong></td>
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</table>
### 14. Conclusions supported by the results?

<table>
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<tr>
<th></th>
<th>Partially – conclusions supported by results, although negative findings not discussed.</th>
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**Total Score (summary quality score)**

\[
28 - (N/A \times 4) = 28 - 8 = 20 \\
18/20 (0.90)
\]

---

**Fulton (2012)**

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<td>3. Method of subject/comparison group selection or source of information/input variables are described and appropriate?</td>
<td>Yes – described and appropriate (p.128)</td>
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<td>4. Subject (and comparison group, if applicable) characteristics sufficiently described?</td>
<td>Yes participants characteristics sufficiently described (p.156-158)</td>
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<td>6. If interventional and blinding of investigators to intervention was possible, was it reported?</td>
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<td>7.</td>
<td>If interventional and blinding of subjects was possible, was it reported?</td>
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<tr>
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<td>Outcome and (if applicable) exposure measure(s) well defined and robust to measurement / misclassification bias? Means of assessment reported?</td>
<td>Yes – validated measures used and described (p.129-148)</td>
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<td>Some estimate of variance reported for the main results?</td>
<td>Yes – appropriate variances estimate(s) are provided i.e. mean, standard deviation, effect size</td>
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<tr>
<td>14.</td>
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<tr>
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<td>Yes – in main study (p.153)</td>
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<tr>
<td>3. Method of subject/comparison group selection or source of information/input variables are described and appropriate?</td>
<td>Yes – described in main study and appropriate.</td>
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<td>4. Subject (and comparison group, if applicable) characteristics sufficiently described?</td>
<td>Yes – in appendix of main study (p.254)</td>
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<td>5. If interventional and random allocation to treatment group was possible, was it described?</td>
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<td>N/A</td>
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<tr>
<td>6. If interventional and blinding of investigators to intervention was possible, was it reported?</td>
<td></td>
<td></td>
<td>N/A</td>
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<tr>
<td>7. If interventional and blinding of subjects was possible, was it reported?</td>
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<td></td>
<td>N/A</td>
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<tr>
<td>8. Outcome and (if applicable) exposure measure(s) well defined and robust to measurement / misclassification bias?</td>
<td>Yes - used validated measures which are described in the main study</td>
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<tr>
<td>Means of assessment reported?</td>
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</tr>
<tr>
<td><strong>9. Sample size appropriate?</strong></td>
<td><strong>Partial - very small sample size – although one significant result reported, majority of results showing strong effect sizes, but not reach significance level likely due to small sample size</strong></td>
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<td><strong>10. Analytic methods described/justified and appropriate?</strong></td>
<td>Yes – described/justified and appropriate</td>
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</tr>
<tr>
<td><strong>11. Some estimate of variance reported for the main results?</strong></td>
<td>Yes – some mentioned i.e. means, standard deviation/standard error</td>
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<tr>
<td><strong>12. Controlled for confounding?</strong></td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>13. Results reported in sufficient detail?</strong></td>
<td>Yes</td>
<td></td>
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</tr>
<tr>
<td><strong>14. Conclusions supported by the results?</strong></td>
<td>No – conclusions about results not drawn as pilot study was to check instructions were clear.</td>
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**Total Score (summary quality score)**

28 - (N/A x 4) = 28 - 8 = 20

16/20 (0.80)
### Appendix

<table>
<thead>
<tr>
<th>Criteria</th>
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<tr>
<td><strong>2.</strong> Study design evident and appropriate?</td>
<td>Yes appropriate</td>
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<tr>
<td><strong>3.</strong> Method of subject/comparison group selection or source of information/input variables are described and appropriate?</td>
<td>Partial – there is a description of subject selection, although reference is made to study data being obtained from a “broader study”, yet this broader study is not cited.</td>
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<td><strong>4.</strong> Subject (and comparison group, if applicable) characteristics sufficiently described?</td>
<td>Yes (p.49)</td>
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<td><strong>5.</strong> If interventional and random allocation to treatment group was possible, was it described?</td>
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<td>N/A</td>
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<tr>
<td><strong>6.</strong> If interventional and blinding of investigators to intervention was possible, was it reported?</td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
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<td><strong>7.</strong> If interventional and blinding of subjects was possible, was it reported?</td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
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<tr>
<td></td>
<td>Question/objective sufficiently described?</td>
<td>Yes (abstract and p.8)</td>
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<tr>
<td>2.</td>
<td>Study design evident and appropriate?</td>
<td>Yes</td>
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</table>

Gu, Baer, Cavanagh, Kuyken, & Strauss (2019) – *stage 3 only*
### Appendices

<table>
<thead>
<tr>
<th></th>
<th>Method of subject/comparison group selection or source of information/input variables are described and appropriate?</th>
<th>Partial – selection methods not completely described but not obvious inappropriateness</th>
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<td>3.</td>
<td>Yes – participant characteristics sufficiently described (p.8)</td>
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<tr>
<td>4.</td>
<td>Subject (and comparison group, if applicable) characteristics sufficiently described?</td>
<td>Yes – validated measures used and clearly described (p.8-9)</td>
</tr>
<tr>
<td>5.</td>
<td>If interventional and random allocation to treatment group was possible, was it described?</td>
<td>N/A</td>
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<tr>
<td>6.</td>
<td>If interventional and blinding of investigators to intervention was possible, was it reported?</td>
<td>N/A</td>
</tr>
<tr>
<td>7.</td>
<td>If interventional and blinding of subjects was possible, was it reported?</td>
<td>N/A</td>
</tr>
<tr>
<td>8.</td>
<td>Outcome and (if applicable) exposure measure(s) well defined and robust to measurement / misclassification bias? Means of assessment reported?</td>
<td>Partial – no power analysis reported although sample size seems appropriate.</td>
</tr>
<tr>
<td>9.</td>
<td>Sample size appropriate?</td>
<td>N/A</td>
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</table>
There is some lack of clarity about how many participants completed specific measures as varying numbers are reported at times.

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<table>
<thead>
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<tbody>
<tr>
<td>10. Analytic methods described/justified and appropriate?</td>
<td>Yes – described and appropriate</td>
<td></td>
</tr>
<tr>
<td>11. Some estimate of variance reported for the main results?</td>
<td>Yes – e.g., means/standard deviations, confidence intervals</td>
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<tr>
<td>12. Controlled for confounding?</td>
<td>N/A</td>
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<tr>
<td>13. Results reported in sufficient detail?</td>
<td>Yes</td>
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</tr>
<tr>
<td>14. Conclusions supported by the results?</td>
<td>Yes</td>
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Total Score (summary quality score) = 28 - (N/A x 4) = 28 - 8 = 20

18/20 (0.90)

Henshall, Alexander, Molyneux, Gardiner, & McLellan (2018)

<table>
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<tr>
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<th>Partial (1)</th>
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<tr>
<td>1. Question/objective sufficiently described?</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Study design evident and appropriate?</td>
<td>Yes – evident and appropriate (p.233)</td>
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<tr>
<td>3. Method of subject/comparison group selection or source of</td>
<td>Yes – described and seems appropriate</td>
<td></td>
<td></td>
<td></td>
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<td>4.</td>
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<td>Yes – participant characteristics sufficiently described (p.239 – study 2)</td>
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<tr>
<td>5.</td>
<td>If interventional and random allocation to treatment group was possible, was it described?</td>
<td>N/A</td>
<td></td>
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<tr>
<td>6.</td>
<td>If interventional and blinding of investigators to intervention was possible, was it reported?</td>
<td>N/A</td>
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<td>7.</td>
<td>If interventional and blinding of subjects was possible, was it reported?</td>
<td>N/A</td>
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<tr>
<td>8.</td>
<td>Outcome and (if applicable) exposure measure(s) well defined and robust to measurement / misclassification bias? Means of assessment reported?</td>
<td>Yes – validated measures used and described.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Sample size appropriate?</td>
<td>Partial – sufficient total number of participants according to power analysis conducted, although unclear in write-up</td>
<td></td>
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<td>No (0)</td>
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<tr>
<td>1. Question/objective sufficiently described?</td>
<td>Yes</td>
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<td></td>
</tr>
<tr>
<td>2. Study design evident and appropriate?</td>
<td>Yes</td>
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<tr>
<td>3. Method of subject/comparison group selection or source of information/input variables are</td>
<td>Yes – described and appropriate (p.47-48)</td>
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Masjedi (2018)
<table>
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<th>described and appropriate?</th>
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<td>4.</td>
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<td>Partial – subject group characteristics sufficiently described. Although no comparison group present.</td>
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<td>5.</td>
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</tr>
<tr>
<td>6.</td>
<td>If interventional and blinding of investigators to intervention was possible, was it reported?</td>
<td>N/A</td>
<td></td>
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</tr>
<tr>
<td>7.</td>
<td>If interventional and blinding of subjects was possible, was it reported?</td>
<td>N/A</td>
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</tr>
<tr>
<td>8.</td>
<td>Outcome and (if applicable) exposure measure(s) well defined and robust to measurement / misclassification bias? Means of assessment reported?</td>
<td>Yes – validated measures used and well described</td>
<td></td>
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<tr>
<td>9.</td>
<td>Sample size appropriate?</td>
<td>No - Although sample size seems appropriate as some significant results achieved. Very low number included in analysis (N = 19/90)</td>
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<tr>
<td>10. Analytic methods described/justified and appropriate?</td>
<td>Yes – described and appropriate</td>
<td></td>
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</tr>
<tr>
<td>11. Some estimate of variance reported for the main results?</td>
<td>Yes – means, standard deviations, reported</td>
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<tr>
<td>12. Controlled for confounding?</td>
<td></td>
<td>N/A</td>
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<tr>
<td>13. Results reported in sufficient detail?</td>
<td>Yes</td>
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<tr>
<td>14. Conclusions supported by the results?</td>
<td>Yes – conclusions supported by results and both significant and non-significant findings discussed</td>
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Total Score (summary quality score)  
28 - (N/A x 4) = 28 - 8 = 20  
17/20 (0.85)

Mills, Wand, & Fraser (2018)

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<tr>
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<td>Yes – described and appropriate (p.6)</td>
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<td>If interventional and random allocation to treatment group was possible, was it described?</td>
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<td></td>
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<tr>
<td>6</td>
<td>If interventional and blinding of investigators to intervention was possible, was it reported?</td>
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<td></td>
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<tr>
<td>7</td>
<td>If interventional and blinding of subjects was possible, was it reported?</td>
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<td></td>
<td>N/A</td>
</tr>
<tr>
<td>8</td>
<td>Outcome and (if applicable) exposure measure(s) well defined and robust to measurement / misclassification bias? Means of assessment reported?</td>
<td>Yes – well defined and valid measures used</td>
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<tr>
<td>9</td>
<td>Sample size appropriate?</td>
<td>Yes – no power analysis reported although assumed appropriate as some significant results achieved</td>
<td></td>
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<tr>
<td>10</td>
<td>Analytic methods described/justified and appropriate?</td>
<td>Yes – described and appropriate</td>
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<tr>
<td>11</td>
<td>Some estimate of variance reported for the main results?</td>
<td>Yes – means, standard deviations, standard error reported</td>
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<td>Controlled for confounding?</td>
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</table>
### Results reported in sufficient detail?

| Yes |

---

### Conclusions supported by the results?

| Yes – conclusions are supported by the results |

---

### Total Score (summary quality score)

\[
28 - (N/A \times 4) = 28 - 8 = 20
\]

**20/20 (1)**

---

**Roxas, David, & Aruta (2019)**

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<td>2. Study design evident and appropriate?</td>
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<tr>
<td>3. Method of subject/comparison group selection or source of information/input variables are described and appropriate?</td>
<td>Partial – selection method / procedure not clearly described i.e. how measures were disseminated etc.</td>
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<td>Partial – only age, gender and professional title described. Factors i.e. years of experience may have influenced the findings</td>
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<td>5. If interventional and random allocation to treatment group was</td>
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<td>N/A</td>
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<td>If interventional and blinding of subjects was possible, was it reported?</td>
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<tr>
<td>8.</td>
<td>Outcome and (if applicable) exposure measure(s) well defined and robust to measurement / misclassification bias? Means of assessment reported?</td>
<td>Yes – validated measures used and described</td>
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<tr>
<td>9.</td>
<td>Sample size appropriate?</td>
<td>Yes – no power analysis reported although assumed appropriate as some significant results achieved</td>
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<tr>
<td>10.</td>
<td>Analytic methods described/justified and appropriate?</td>
<td>Yes – stated and appropriate</td>
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<td>Some estimate of variance reported for the main results?</td>
<td>Yes – means, standard deviations reported</td>
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<td>Results reported in sufficient detail?</td>
<td>Partial – seem appropriate, although for measures results are clearly described for some</td>
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Appendices

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
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<td>Total Score (summary quality score)</td>
<td>28 - (N/A x 4) = 28 - 8 = 20</td>
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<tr>
<td></td>
<td>17/20 (0.85)</td>
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Yip, Mak, Chio, & Law (2017)

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<td>6. If interventional and blinding of investigators to intervention was</td>
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<td>8.</td>
<td>Outcome and (if applicable) exposure measure(s) well defined and robust to measurement / misclassification bias? Means of assessment reported?</td>
<td>Yes – validated measures used and sufficiently described.</td>
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<td>Analytic methods described/justified and appropriate?</td>
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<td>11.</td>
<td>Some estimate of variance reported for the main results?</td>
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<td>13.</td>
<td>Results reported in sufficient detail?</td>
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<tr>
<td>14.</td>
<td>Conclusions supported by the results?</td>
<td>Yes – conclusions are supported by the results</td>
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<td>20/20 (1)</td>
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Appendices

Appendix D    ERGO Ethical Approval

ERGO II – Ethics and Research Governance Online https://www.ergo2.soton.ac.uk

Submission ID: 48071.A3
Submission Title: An Evaluation of the Impact of a Brief Compassionate Mind Training on Burnout and Self-Criticism in Mental Healthcare Professionals (Amendment 3)
Submitter Name: Emel Atuk

The Research Integrity and Governance team have reviewed and approved your submission.

You may only begin your research once you have received all external approvals (e.g. NRES/HRA/HR/IMMP/HMREC etc or Health and Safety approval e.g. for a Genetic or Biological Materials Risk Assessment).

The following comments have been made:

- 
- 

Please note documents have been attached to this approval that require your review.

Once external approvals are received you should upload your final document set and approval letters to ERGO using the Upload External Approvals button.

NO ACTION REQUIRED – Coordinator has confirmed all external documents uploaded – ERGO II 48071.A3

ERGO I – Ethics and Research Governance Online https://www.ergo2.soton.ac.uk

Submission ID: 48071.A3
Submission Title: An Evaluation of the Impact of a Brief Compassionate Mind Training on Burnout and Self-Criticism in Mental Healthcare Professionals (Amendment 3)
Submitter Name: Emel Atuk

This email is to confirm that external approval documents have been successfully uploaded to this submission.

Click here to view this submission

For 2019/20 Submitter, coordinator has confirmed all external approvals uploaded for 2019/20 2 Atuk Emel at uo coordinator
### Appendix E  IRAS Ethical Approval

#### IRAS Form Submission History

<table>
<thead>
<tr>
<th>Organisation Name</th>
<th>Event Date</th>
<th>Event Description</th>
</tr>
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<tbody>
<tr>
<td>Application to conduct research in NHBM/SC (incl. Ethical Review when required)</td>
<td>05.11.2019 17:20</td>
<td>Submission status: 2000 REC Decision Made - Favourable Opinion</td>
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<tr>
<td>Application to conduct research in NHBM/SC (incl. Ethical Review when required)</td>
<td>05.11.2019 17:18</td>
<td>Submission status: 2020 Approval Outcome</td>
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<td>20.10.2019 15:51</td>
<td>Submission status: Z250 Submission Valid - Awaiting Decision</td>
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<td>22.10.2019 11:59</td>
<td>Submission status: 1001 Submission Received</td>
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<td>22.10.2019 11:55</td>
<td>Submission status: 1000(RF) Submission Pending</td>
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**Description**

- **Submission status: 2000 REC Decision Made - Favourable Opinion**
  - Description: Decision Made - Favourable Opinion

- **Submission status: 2020 Approval Outcome**
  - Description: Approved

- **Submission status: Z250 Submission Valid - Awaiting Decision**
  - Description: Your submission has been made valid is awaiting a decision.

- **Submission status: 1001 Submission Received**
  - Description: Submission received and documents downloaded. Booking Reference: 19/CBS/0017; REC Reference: Y00466069; REC: Non-REC: England F;

- **Submission status: 1000(RF) Submission Pending**
  - Description: Submission created
Appendices

Appendix F  Online Participant Information Sheet and Consent

Statement

**Study Title:** An Evaluation of the Impact of a Brief Compassionate Mind Training on Burnout and Self-Criticism in Mental Health Professionals.

**Researcher:** Emel Atuk  
**ERGO number:** 48071

*You are being invited to take part in the above research study. To help you decide whether you would like to take part or not, it is important that you understand why the research is being done and what it will involve.*

*Please read the information below carefully and ask questions if anything is not clear or you would like more information about before you decide to take part in this research. You may wish to discuss it with others, but it is up to you to decide whether or not to take part.*

*If you are happy to participate, you will be asked to confirm that you consent to participate in the study by checking the consent box below.*

**What is the research about?**
I am a Trainee Clinical Psychologist, currently undertaking the Doctorate in Clinical Psychology (DClinPsych) programme at the University of Southampton. This research is part of my doctoral thesis investigating the impact of a brief 2-week Compassionate Mind Training (CMT practices) on burnout and self-criticism among mental healthcare professionals.

**Why have I been asked to participate?**
This study is targeted towards individuals self-identifying as mental healthcare professionals, as burnout is a particular difficulty for this population group; this also includes healthcare professionals working in a mental healthcare setting. You have been asked to participate because you responded to an advertisement regarding participation in this study and you may meet the full eligibility criteria outlined below.

**Eligibility Criteria**

**Inclusion Criteria:**
You are eligible to participate in this study if you are a mental healthcare professional by qualification, or a healthcare professional working in a mental healthcare setting, have been employed for at least six months providing direct patient care and are over the age of 18 years. You will also need to have internet access to access the online questionnaires/CMT practices; this is also mobile friendly. You will also need to have a good level of English to be able to access the online questionnaires/CMT practices; if you are able to read through this information sheet and understand the consent statements below, your English is considered sufficient.

**Exclusion Criteria:**
Unfortunately, if you are currently participating in a compassion focused intervention for yourself at the time of this study, you will not be eligible to participate in the study as this could affect the conclusions made about this intervention in this study. However, you will be able to access the CMT practices, without the questionnaires included, until the end of the study period. You will also not be eligible to participate in this study if you have difficulties with understanding or speaking English. This is because this study is an online-based study and the study materials will be presented in English, without translation or the use of interpreters being possible. However, if
you have been able to read to this point, you will be considered to have sufficient English to be eligible to provide informed consent to participate in this study.

**What will happen to me if I take part?**

There are two parts to this study (Parts A and B); you have the option to consent to participate in just Part A or both Parts A and B. You also have the option to consent to be entered into a prize draw to win one of six £25 Amazon gift vouchers as a thank you for your participation.

**Part A:** If you decide to take part in this study, you will be asked some demographic questions and will complete some questionnaires that will take approximately 30-35 minutes to complete. You will then be asked whether you would like to consent to participate in Part B; if not, your participation in the study will end here.

**Part B:** If you decide to participate in this part of the study as well, you will be randomly allocated to either a 2-week Compassionate Mind Training (CMT practices) group or a waitlist group (if you are in the waitlist control group, you will be able to access the intervention after four weeks via a link in the debriefing statement; this link will be active until 30th September, 2020).

If you are in the intervention group, you will be asked to also listen to an approximately 30-minute psychoeducational recording introducing you to the CMT practices on two occasions. You will then be asked to listen to brief audio-recorded CMT practice(s) each day two weeks; these will last no longer than 20 minutes. An automatic reminder email to practice the CMT practices will be sent to you via the email address you provide daily. The CMT practices will be based online so you will be able to listen to the audio-recordings at a convenient time for you; these will be accessible via mobile phone also.

Both the intervention group and the waitlist group will be asked to complete the same questionnaires as in Part A on two more occasions; after the 2-week intervention period and then again after 2 weeks following this. If you are in the intervention group, you will also complete some likert-scale type questions about your experiences of the intervention, and we will take this into consideration for this and future studies.

**Are there any benefits in my taking part?**

You will have access to a brief intervention that you may find beneficial for you psychological wellbeing. Your participation will also help improve our current understanding of burnout, self-criticism and compassion and improve the interventions aimed at reducing burnout and self-criticism among mental healthcare professionals.

Upon your completion of the study, you are able to enter a prize draw to win **one of six £25 Amazon gift vouchers** to say thank you for participating in this study.

**Are there any risks involved?**

There are no major risks of participating in this study, although some of the questions in the questionnaires and the intervention may temporarily increase some temporary emotional discomfort and a heightened awareness of uncomfortable feelings (i.e. burnout). Any discomfort should be temporary, however, if you become too uncomfortable while participating, you are able to withdraw from the study at any point. Also, if you feel any distress at any point in the study and would like some support, you are able to contact the Samaritans, free at any time, from any phone, on 116 123.

**What data will be collected and will my participation be confidential?**

Demographic information such as your age, gender, questions about your professional role, years of clinical experience, whether your role is full-time/part-time/voluntary, will be collected. You will also be asked for your email address to send study reminders to, maintain contact during the study, and to match you to your data across the time points for the analyses.

Your participation in this study, data and the information we collect about you during the course of the research will be kept strictly confidential. Only members of the research team (my research supervisors) and responsible members of the University
of Southampton may be given access to data about you for monitoring purposes and/or to carry out an audit of the study to ensure that the research is complying with applicable regulations. Individuals from regulatory authorities (people who check that we are carrying out the study correctly) may require access to your data. All of these people have a duty to keep your information, as a research participant, strictly confidential.

All data will be stored securely on a password protected document in line with the General Data Protection Regulation (2018) and the University of Southampton policy and will be destroyed after 10 years. Details provided for the prize draw will be destroyed once the draw has taken place.

Do I have to take part?
No, it is entirely up to you to decide whether or not to take part. If you decide you want to take part, you will need to check the consent box at the bottom of this form to show you have agreed to take part. It is also up to you whether you want to be entered into the prize draw.

What happens if I change my mind?
Your participation is voluntary and you have the right to change your mind and withdraw at any time without giving a reason during the study. However, it may not be possible to remove your data after the data has been analysed, as your data will not be identifiable at this stage. If you wish to withdraw before this stage, please email the Chief Investigator, using the email below, with your unique ID and your data will be removed from the dataset.

If you withdraw from the study, we will keep the demographic information about your professional role to explore in the analyses whether there are any group differences in those participating and those withdrawing.

What will happen to the results of the research?
Your personal details will remain strictly confidential. It is possible that the results of this research will be published in a peer-reviewed academic journal, disseminated in staff newsletters/social media accounts of participating Trusts/organisations and presented at conferences. The research findings made available in any reports, publications or presentations will not include any information that can directly identify you. As per the University of Southampton policy, the data will be stored for a period of 10 years, and it will be permanently destroyed after this time.

If you would like to receive a copy of the study results, please check the relevant box below.

Where can I get more information?
If you have any questions of require further information after reading this information sheet, please do not hesitate to contact the Chief Investigator on e.atuk@soton.ac.uk.

Contact details of the research team
Research Supervisors
Dr Margo Ononaiye, m.s.ononaiye@soton.ac.uk
Dr Catherine Brignell, c.brignell@soton.ac.uk

What happens if there is a problem or something goes wrong?
If you have a concern about any aspect of this study, you should speak to the Chief Investigator or the research team who will do their best to answer your questions. If you remain unhappy or have a complaint about any aspect of this study, please contact the University of Southampton Research Integrity and Governance Manager (023 8059 5058, rgoninfo@soton.ac.uk).

*Thank you for taking the time to read the participant information sheet and considering taking part in this research.*
If you wish to participate in **Part A of the** study, please check the consent box below. By checking the box you are consenting that:

I. You have read and understood the above information and have had the opportunity to ask questions about the study.

II. You agree to take part in this research project and agree for your data to be used for the purpose of this study.

III. You understand your participation is voluntary and you may withdraw at any time during the data collection period without your legal rights being affected.

IV. You understand that should you withdraw from the study then the demographic information collected about you may still be used for the purposes analysing any group differences in those participating and withdrawing from the study.

V. You understand you will not be directly identified in any reports of the research

☐ Please check this box to indicate that you consent to participating in Part A of the study.

☐ Please check this box to indicate that you consent to be entered into a prize draw to win one of six £25 Amazon gift vouchers at the end of your participation; this is optional.

☐ Please check this box to indicate that would like to receive the findings of this project; this is optional

*After Part A has been completed*

*Thank you for your participation in Part A. If you would like take part in an intervention that may help with psychological wellbeing, please check the consent box below.*

By ticking the box you are consenting that:

I. You have read and understood the above information and have had the opportunity to ask questions about the study.

II. You agree to take part in this research project and agree for your data to be used for the purpose of this study.

III. You understand your participation is voluntary and you may withdraw at any time during the data collection period without your legal rights being affected.

IV. You understand that should you withdraw from the study then the demographic information collected about you may still be used for the purposes analysing any group differences in those participating and withdrawing from the study.

V. You understand you will not be directly identified in any reports of the research

☐ Please check this box to indicate that you consent to participating in Part B of the study.

☐ Please check this box to indicate that would like to receive the findings of this project; this is optional

******************************************************************************************
Data Protection Privacy Notice
The University of Southampton conducts research to the highest standards of research integrity. As a publicly-funded organisation, the University has to ensure that it is in the public interest when we use personally-identifiable information about people who have agreed to take part in research. This means that when you agree to take part in a research study, we will use information about you in the ways needed, and for the purposes specified, to conduct and complete the research project. Under data protection law, 'Personal data' means any information that relates to and is capable of identifying a living individual. The University’s data protection policy governing the use of personal data by the University can be found on its website (https://www.southampton.ac.uk/legalservices/what-we-do/data-protection-and-foi.page).

This Participant Information Sheet tells you what data will be collected for this project and whether this includes any personal data. Please ask the research team if you have any questions or are unclear what data is being collected about you.

Our privacy notice for research participants provides more information on how the University of Southampton collects and uses your personal data when you take part in one of our research projects and can be found at http://www.southampton.ac.uk/assets/sharepoint/intranet/ls/Public/Research%20and%20Integrity%20Privacy%20Notice/Privacy%20Notice%20for%20Research%20Particpants.pdf

Any personal data we collect in this study will be used only for the purposes of carrying out our research and will be handled according to the University’s policies in line with data protection law. If any personal data is used from which you can be identified directly, it will not be disclosed to anyone else without your consent unless the University of Southampton is required by law to disclose it.

Data protection law requires us to have a valid legal reason ('lawful basis') to process and use your Personal data. The lawful basis for processing personal information in this research study is for the performance of a task carried out in the public interest. Personal data collected for research will not be used for any other purpose.

For the purposes of data protection law, the University of Southampton is the ‘Data Controller’ for this study, which means that we are responsible for looking after your information and using it properly. The University of Southampton will keep identifiable information about you for 10 years after the study has finished after which time any link between you and your information will be removed.

To safeguard your rights, we will use the minimum personal data necessary to achieve our research study objectives. Your data protection rights – such as to access, change, or transfer such information - may be limited, however, in order for the research output to be reliable and accurate. The University will not do anything with your personal data that you would not reasonably expect.

If you have any questions about how your personal data is used, or wish to exercise any of your rights, please consult the University’s data protection webpage (https://www.southampton.ac.uk/legalservices/what-we-do/data-protection-and-foi.page) where you can make a request using our online form. If you need further assistance, please contact the University’s Data Protection Officer (data.protection@soton.ac.uk).

*******************************************************************************
## Appendix G  Additional Participant Demographics (Table G1)

Table G1  
*Additional Participant Demographics by Group*

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Pre- and Post-Intervention</th>
<th>Pre-</th>
<th>Post-</th>
<th>Waitlist</th>
<th>Waitlist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline Group</td>
<td>Group</td>
<td>Group</td>
<td>Group</td>
<td>Group</td>
</tr>
<tr>
<td>Total (N)</td>
<td>205</td>
<td>28</td>
<td>40</td>
<td>20</td>
<td>27</td>
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<td>Profession/Title</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychiatrist</td>
<td>8 (3.9%)</td>
<td>0 (0%)</td>
<td>3 (7.5%)</td>
<td>0 (0%)</td>
<td>2 (7.4%)</td>
</tr>
<tr>
<td>Psychologist</td>
<td>31 (15.1%)</td>
<td>7 (25%)</td>
<td>5 (12.5%)</td>
<td>7 (35%)</td>
<td>3 (11.1%)</td>
</tr>
<tr>
<td>Occupational Therapist</td>
<td>9 (4.4%)</td>
<td>1 (3.6%)</td>
<td>3 (7.5%)</td>
<td>0 (0%)</td>
<td>2 (7.4%)</td>
</tr>
<tr>
<td>Nurse</td>
<td>70 (34.2%)</td>
<td>4 (14.3%)</td>
<td>16 (40%)</td>
<td>3 (15%)</td>
<td>10 (37%)</td>
</tr>
<tr>
<td>Social Worker</td>
<td>8 (3.9%)</td>
<td>0 (0%)</td>
<td>3 (7.5%)</td>
<td>0 (0%)</td>
<td>1 (3.7%)</td>
</tr>
<tr>
<td>Support Worker</td>
<td>9 (4.39%)</td>
<td>3 (10.71%)</td>
<td>1 (2.5%)</td>
<td>2 (10%)</td>
<td>1 (3.7%)</td>
</tr>
<tr>
<td>Family/Systemic Therapist</td>
<td>3 (1.5%)</td>
<td>0 (0%)</td>
<td>1 (2.5%)</td>
<td>0 (0%)</td>
<td>1 (3.7%)</td>
</tr>
<tr>
<td>Associate Practitioner</td>
<td>3 (1.5%)</td>
<td>0 (0%)</td>
<td>1 (2.5%)</td>
<td>0 (0%)</td>
<td>1 (3.7%)</td>
</tr>
<tr>
<td>Assistant Psychologist</td>
<td>4 (2%)</td>
<td>1 (3.6%)</td>
<td>0 (0%)</td>
<td>1 (5%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Student/Trainee</td>
<td>18 (8.8%)</td>
<td>5 (17.9%)</td>
<td>0 (0%)</td>
<td>3 (15%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Other</td>
<td>42 (20.5%)</td>
<td>7 (25%)</td>
<td>7 (17.5%)</td>
<td>0 (0%)</td>
<td>6 (22.2%)</td>
</tr>
<tr>
<td>Service Working in</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child &amp; Adolescent Mental Health</td>
<td>37 (18.1%)</td>
<td>3 (10.7%)</td>
<td>10 (25%)</td>
<td>3 (15%)</td>
<td>6 (22.2%)</td>
</tr>
<tr>
<td>Adult Mental Health</td>
<td>126 (61.5%)</td>
<td>19 (67.9%)</td>
<td>24 (60%)</td>
<td>12 (60%)</td>
<td>17 (63%)</td>
</tr>
<tr>
<td>Older Adult</td>
<td>24 (11.7%)</td>
<td>3 (10.7%)</td>
<td>7 (17.5%)</td>
<td>1 (5%)</td>
<td>5 (18.5%)</td>
</tr>
<tr>
<td>Learning Disability</td>
<td>8 (3.9%)</td>
<td>1 (3.6%)</td>
<td>1 (2.5%)</td>
<td>0 (0%)</td>
<td>1 (3.7%)</td>
</tr>
<tr>
<td></td>
<td>Appendices</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inpatient</td>
<td>Outpatient</td>
<td>Other</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>29 (14.2%)</td>
<td>2 (7.1%)</td>
<td>4 (10%)</td>
<td>2 (10%)</td>
<td>4 (14.8%)</td>
</tr>
<tr>
<td></td>
<td>13 (6.3%)</td>
<td>1 (3.6%)</td>
<td>6 (15%)</td>
<td>1 (5%)</td>
<td>4 (14.8%)</td>
</tr>
<tr>
<td></td>
<td>15 (7.3%)</td>
<td>3 (10.7%)</td>
<td>3 (7.5%)</td>
<td>2 (10%)</td>
<td>3 (11.1%)</td>
</tr>
<tr>
<td>Clinical work/direct patient care</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Six-11 months</td>
<td>1 (.5%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>1-2 years</td>
<td>13 (6.3%)</td>
<td>4 (14.3%)</td>
<td>1 (2.5%)</td>
<td>2 (10%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>3-4 years</td>
<td>36 (17.6%)</td>
<td>4 (14.3%)</td>
<td>7 (17.5%)</td>
<td>4 (20%)</td>
<td>6 (22.2%)</td>
</tr>
<tr>
<td>5+ years</td>
<td>63 (30.7%)</td>
<td>10 (35.7%)</td>
<td>9 (22.5%)</td>
<td>7 (35%)</td>
<td>8 (29.6%)</td>
</tr>
<tr>
<td>10+ years</td>
<td>92 (44.9%)</td>
<td>10 (35.7%)</td>
<td>23 (57.5%)</td>
<td>7 (35%)</td>
<td>13 (48.2%)</td>
</tr>
</tbody>
</table>
Appendix H   Eligibility Screening Questions

Thank you for consenting to participate in Part A of the study. The following pages will ask you a few questions about you.

1) I AM currently engaged in any intervention/training based on Compassion Focused Therapy or Compassionate Mind Training?*
   - Yes
   - No

2) I AM NOT currently engaged in any intervention/training based on Compassion Focused Therapy or Compassionate Mind Training?**
   - Yes
   - No

3) I have NOT been employed least 6 months with direct patient care for individuals with mental healthcare difficulties?*
   - Yes
   - No

4) I HAVE been employed for at least 6 months with direct patient care for individuals with mental healthcare difficulties?**
   - Yes
   - No

* Individuals who check either of these questions as “YES” will be directed to a version of the intervention, via the Qualtrics software, without completing any further questions/measures as they meet the exclusion criteria for participating in the study.

** Individuals who check both of both of these questions as “YES” will continue through with the next step of the study as they meet the inclusions criteria for participating in the study.
Appendix I  Demographic Information Measure

Thank you for consenting to participate in Part A of the study. The following pages will ask you a few questions about you and will then take you through each of the questionnaires.

1) Email address (to send study information/reminders and, if consented, will be used for the prize draw)

2) Age
   - 18-24 years old
   - 25-34 years old
   - 35-44 years old
   - 45-54 years old
   - 55-64 years old
   - 65+

3) Gender
   - Male
   - Female
   - Other
   - Prefer to not state

4) Do you work for
   - The NHS
   - A Non-NHS Organisation
     i. Please state:

5) Are you a
   - Student/Assistant/Trainee
   - Qualified Professional/Practitioner
     i. Mental healthcare professional/practitioner by qualification (i.e. you have a qualification relating to mental healthcare)
     ii. Mental healthcare professional/practitioner, not by qualification, but by experience of working within a mental healthcare team

6) Profession/Title:
   - Psychiatrist
   - Psychologist
   - Occupational Therapist
   - Nurse
   - Social Worker
   - Support Worker
   - Family/Systemic Therapist
   - Speech and Language Therapist
Associate Practitioner
Assistant Psychologist
Student/Trainee
Other – Please state ……………………………………………………..

7) Service Working in (please check all those that apply)
   - Child and Adolescent Mental Health
   - Adult Mental Health
   - Older Adult
   - Learning Disability
   - Inpatient
   - Outpatient
   - Other – Please state ……………………………

8) Type of Employment
   - Full-time
   - Part-time
   - Voluntary/Honorary
   - Other – Please state ……………………………

9) Years of clinical work with direct patient care
   - Six – 11 months
   - 1 – 2 years
   - 3 – 4 years
   - 5+ years
   - 10+ years
Appendix J  The Compassionate Engagement and Action Scales

Self-compassion

When things go wrong for us and we become distressed by setbacks, failures, disappointments or losses, we may cope with these in different ways. We are interested in the degree to which people can be compassionate with themselves. We define compassion as “a sensitivity to suffering in self and others with a commitment to try to alleviate and prevent it.” This means there are two aspects to compassion. The first is the ability to be motivated to engage with things/feelings that are difficult as opposed to trying to avoid or suppress them. The second aspect of compassion is the ability to focus on what is helpful to us. Just like a doctor with his/her patient. The first is to be motivated and able to pay attention to the pain and (learn how to) make sense of it. The second is to be able to take the action that will be helpful. Below is a series of questions that ask you about these two aspects of compassion. Therefore read each statement carefully and think about how it applies to you if you become distressed. Please rate the items using the following rating scale:

<table>
<thead>
<tr>
<th>Never</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>9</td>
<td>10</td>
</tr>
</tbody>
</table>

Section 1 – These are questions that ask you about how motivated you are, and able to engage with distress when you experience it. So:

When I’m distressed or upset by things…

1. I am motivated to engage and work with my distress when it arises.

2. I notice, and am sensitive to my distressed feelings when they arise in me.

(r)3. I avoid thinking about my distress and try to distract myself and put it out of my mind.
Appendices

4. I am *emotionally moved* by my distressed feelings or situations.

5. I *tolerate* the various feelings that are part of my distress.

6. I *reflect on* and *make sense* of my feelings of distress.

(r)7 I do not tolerate being distressed.

8. I am *accepting, non-critical and non-judgemental* of my feelings of distress.

**Section 2 – These questions relate to how you actively cope in compassionate ways with emotions, thoughts and situations that distress you. So:**

When I’m distressed or upset by things…

1. I direct my *attention* to what is likely to be helpful to me.

2. I *think* about and come up with helpful ways to cope with my distress.

(r)3. I don’t know how to help myself.

4. I take the *actions* and do the things that will be helpful to me.

5. I create inner feelings of *support, helpfulness and encouragement.*

**Compassion to Others**

When things go wrong for other people and they become distressed by setbacks, failures, disappointments or losses, we may cope with their distress in different ways. We are interested in the degree to which people can be compassionate to others. We define compassion as “a sensitivity to suffering in self and others with a commitment to try to alleviate and prevent it.” This means there are two aspects to compassion. The *first* is the ability to be motivated to engage with things/feelings that are difficult as opposed to trying to avoid or suppress them. The *second* aspect of compassion is the ability to focus on what is helpful. Just like a doctor with his/her patient. The first is to be motivated and able to pay attention to the pain and (learn how to) make sense of it. The second is to be able to
take the action that will be helpful. Below is a series of questions that ask you about these two aspects of compassion. Therefore read each statement carefully and think about how it applies to you when people in your life become distressed. Please rate the items using the following rating scale:

<table>
<thead>
<tr>
<th>Never</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Section 1 – These are questions that ask you about how motivated you are, and able to engage with other people’s distress when they are experiencing it. So:

When others are distressed or upset by things…

1. I am motivated to engage and work with other peoples’ distress when it arises.

2. I notice and am sensitive to distress in others when it arises.

(r)3. I avoid thinking about other peoples’ distress, try to distract myself and put it out of my mind.

4. I am emotionally moved by expressions of distress in others.

5. I tolerate the various feelings that are part of other people’s distress.

6. I reflect on and make sense of other people’s distress.

(r)7 I do not tolerate other peoples’ distress.

8. I am accepting, non-critical and non-judgemental of others people’s distress.

Section 2 – These questions relate to how you actively respond in compassionate ways when other people are distressed. So:

When others are distressed or upset by things…

1. I direct attention to what is likely to be helpful to others.
2. I think about and come up with helpful ways for them to cope with their distress.

(r)3. I don’t know how to help other people when they are distressed.

4. I take the actions and do the things that will be helpful to others.

5. I express feelings of support, helpfulness and encouragement to others.

Compassion from Others

When things go wrong for us and we become distressed by setbacks, failures, disappointments or losses, others may cope with our distress in different ways. We are interested in the degree to which you feel that important people in your life can be compassionate to your distress. We define compassion as “a sensitivity to suffering in self and others with a commitment to try to alleviate and prevent it.” This means there are two aspects to compassion. The first is the ability to be motivated to engage with things/feelings that are difficult as opposed to trying to avoid or suppress them. The second aspect of compassion is the ability to focus on what is helpful to us or others. Just like a doctor with his/her patient. The first is to be motivated and able to pay attention to the pain and (learn how to) make sense of it. The second is to be able to take the action that will be helpful. Below is a series of questions that ask you about these two aspects of compassion. Therefore read each statement carefully and think about how it applies to the important people in your life when you become distressed. Please rate the items using the following rating scale:

<table>
<thead>
<tr>
<th>Never</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>Always</th>
</tr>
</thead>
</table>

Section 1 – These are questions that ask you about how motivated you think others are, and how much they engage with your distress when you experience it. So:

When I’m distressed or upset by things…
1. Other people are actively *motivated* to engage and work with my distress when it arises.

2. Others *notice* and *are sensitive* to my distressed feelings when they arise in me.

(r)3 Others avoid thinking about my distress, try to distract themselves and put it out of their mind.

4. Others are *emotionally moved* by my distressed feelings.

5. Others *tolerate* my various feelings that are part of my distress.

6. Others *reflect on* and *make sense* of my feelings of distress.

(r)7. Others do not tolerate my distress.

8. Others are *accepting, non-critical and non-judgemental* of my feelings of distress.

**Section 2 – These questions relate to how others actively cope in compassionate ways with emotions and situations that distress you. So:**

When I’m distressed or upset by things…

1. Others direct their *attention* to what is likely to be helpful to me.

2. Others *think about* and come up with helpful ways for me to cope with my distress.

(r)3. Others don’t know how to help me when I am distressed

4. Others take the *actions* and do the things that will be helpful to me.

5. Others treat me with feelings of *support, helpfulness and encouragement*.

**NOTE FOR USERS: REVERSE ITEMS (r) ARE NOT INCLUDED IN THE SCORING**

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Appendix K  Copenhagen Burnout Inventory

The three scales and the scoring system

All items are scored from 0 to 100 with five response options.

The respondent is scored as a non-responder if less than half of the questions in a scale are answered.

Personal burnout

Personal burnout is “the degree of physical and psychological fatigue and exhaustion experienced by the person”

The dimension is measured with the following items:

1. How often do you feel tired?
2. How often are you physically exhausted?
3. How often are you emotionally exhausted?
4. How often do you think: ”I can’t take it any more”?
5. How often do you feel worn out?
6. How often do you feel weak and susceptible to illness?

Response options: Always (100), Often (75), Sometimes (50), Seldom (25), Never/ almost never (0).

Work-related burnout

Work-related burnout is “the degree of physical and psychological fatigue and exhaustion that is perceived by the person as related to his/her work”

The dimension is measured with the following items:

1. Do you feel worn out at the end of the working day?*
2. Are you exhausted in the morning at the thought of another day at work?*
3. Do you feel that every working hour is tiring for you?*
4. Do you have enough energy for family and friends during leisure time?* (Reversed scoring).
5. Is your work emotionally exhausting?**
6. Does your work frustrate you?**
7. Do you feel burnt out because of your work?**

* Response options: Always (100), Often (75), Sometimes (50), Seldom (25),
    Never/almost never (0).

** Response options: To a very high degree (100), To a high degree (75), Somewhat (50),
    To a low degree (25), To a very low degree (0).

** Client-related burnout

Client-related burnout is “the degree of physical and psychological fatigue and exhaustion
that is perceived by the person as related to his/her work with clients”

(This scale is relevant for employees who do “people work”. Depending on context the
word “client” may be replaced with customer, patient, student, resident, inmate, etc.).

The dimension is measured with the following items:

1. Do you find it hard to work with clients?**
2. Does it drain your energy to work with clients?**
3. Do you find it frustrating to work with clients?**
4. Do you feel that you give more than you get back when you work with clients?**
5. Are you tired of working with clients?*
6. Do you sometimes wonder how long you will be able to continue working with
    clients?*

* Response options: Always (100), Often (75), Sometimes (50), Seldom (25),
    Never/almost never (0).

** Response options: To a very high degree (100), To a high degree (75), Somewhat (50),
    To a low degree (25), To a very low degree (0).

Presenting the questions in the questionnaire:

It is usually a good idea to mix the questions in order to avoid stereotype answers. If possible
the questions should also be mixed with questions on other topics such as stress, sleep,
health, pain etc. (Providing that the questions have the same response options).

---

6 For the current study, the questions from each scale were mixed by alternating the questions from each scale.
Appendices

Appendix L Forms of Self-Criticising/Attacking and Self-Reassuring Scale

When things go wrong in our lives or don’t work out as we hoped, and we feel we could have done better, we sometimes have negative and self-critical thoughts and feelings. These may take the form of feeling worthless, useless or inferior etc. However, people can also try to be supportive of themselves. Below are a series of thoughts and feelings that people sometimes have. Read each statement carefully and circle the number that best describes how much each statement is true for you. Please use the scale below:

<table>
<thead>
<tr>
<th>Not at all</th>
<th>A little bit</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>like me</td>
<td>like me</td>
<td>like me</td>
<td>like me</td>
<td>like me</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

When things go wrong for me:

1. I am easily disappointed with myself. (is)
2. There is a part of me that puts me down. (is)
3. I am able to remind myself of positive things about myself. (rs)
4. I find it difficult to control my anger and frustration at myself. (is)
5. I find it easy to forgive myself. (rs)
6. There is a part of me that feels I am not good enough. (is)
7. I feel beaten down by my own self-critical thoughts. (is)
8. I still like being me. (rs)
9. I have become so angry with myself that I want to hurt or injure myself. (hs)
10. I have a sense of disgust with myself. (hs)
11. I can still feel lovable and acceptable. (rs)
12. I stop caring about myself. (hs)
13. I find it easy to like myself. (rs)
14. I remember and dwell on my failings. (is)
15. I call myself names. (hs)
16. I am gentle and supportive with myself. (rs)
17. I can’t accept failures and setbacks without feeling inadequate. (is)
18. I think I deserve my self-criticism. (is)
19. I am able to care and look after myself. (rs)
20. There is a part of me that wants to get rid of the bits I don’t like. (is)
21. I encourage myself for the future. (rs)
22. I do not like being me. (hs)

KEY FOR SUBSCALES:

is = inadequate self,
rs = reassured self,
hs = hated self
Appendix M  Depression, Anxiety, and Stress Scale-21

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 - Did not apply to me at all
1 - Applied to me to some degree, or some of the time
2 - Applied to me to a considerable degree or a good part of time
3 - Applied to me very much or most of the time

1 (s). I found it hard to wind down

2 (a). I was aware of dryness of my mouth

3 (d). I couldn’t seem to experience any positive feeling at all

4 (a). I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion)

5 (d). I found it difficult to work up the initiative to do things

6 (s). I tended to over-react to situations

7 (a). I experienced trembling (e.g. in the hands)

8 (s). I felt that I was using a lot of nervous energy

9 (a). I was worried about situations in which I might panic and make a fool of myself

10 (d). I felt that I had nothing to look forward to

11 (s). I found myself getting agitated
12 (s). I found it difficult to relax

13 (d). I felt down-hearted and blue

14 (s). I was intolerant of anything that kept me from getting on with what I was doing

15 (a). I felt I was close to panic

16 (d). I was unable to become enthusiastic about anything

17 (d). I felt I wasn’t worth much as a person

18 (s). I felt that I was rather touchy

19 (a). I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat)

20 (a). I felt scared without any good reason

21 (d). I felt that life was meaningless
Appendix N  Additional Likert-Scale Questions

Post-Intervention:

The following statements will ask you about your views and experiences of the intervention.

1. The psychoeducational audio recording at the beginning of the study was helpful
2. I found the online CMT practices accessible
3. The CMT practices were feasible to do within the time frame given
4. Going through the CMT practices was worth my time
5. The length of the audio recordings were too long
6. I would be willing to continue practicing the CMT practices frequently
7. I would recommend the CMT practices to my colleagues
8. The CMT practices were unnecessarily complex
9. It was easy to adhere to the instructions of the CMT practices
10. I was able to bring my compassionate self to my everyday life
11. The CMT practices were helpful

Follow-up:

The following statements will ask you about your views and experiences over the last two weeks, since completing the intervention.

1. I would have liked to have continued with intervention (CMT practices)
2. I would like to use the CMT practices again in the future
3. I continue to feel the benefits (if any) of the CMT practices from two weeks ago
4. I was able to continue to bring my compassionate self to my everyday life

All items scored on a likert scale ranging between:

Strongly Disagree, Mostly Disagree, Slightly Disagree, Neutral, Slightly Agree, Mostly agree, Strongly Agree
Appendix O  Study Flow Chart

Start:

- Study advertisement to mental healthcare professionals with link to participate in the online study.

Mental healthcare professionals interested, follow link to online participant information and consent statement to opt-in to participate in Part A of the study and to enter draw for Amazon voucher. Completion of all questionnaires ('baseline') via Qualtrics software.

- Participants given option to consent to opt-into Part B of the study.

YES:

- Participants randomly allocated by Qualtrics software to one of two conditions.

  - Intervention group: Engage with CMT practices as per instructions.
  - Wait-list control group: No access to the CMT practices.

Completion of all questionnaires ('post-intervention'); after two weeks. Email prompt via Qualtrics software for wait-list control group. Intervention group also complete additional questions about experiences of the intervention.

Completion of all questionnaires ('follow-up') after two weeks; email prompt via Qualtrics software for both groups. Intervention group also complete additional questions about maintaining effects of intervention.

Online debrief statement given; end of participation.

NO:

Online debriefing statement given; end of participation.

Non-eligible participants given access to the intervention, without the questionnaires, until the end of the study period; 30th September, 2020.

Wait-list control group given access to the intervention, without the questionnaires, until the end of the study period; 30th September, 2020.

Draw for six £25 Amazon vouchers conducted at the end of the study; once all data has been collated; winners will be contacted via email.
Appendices

Appendix P  Study Advertisement

PARTICIPANTS NEEDED FOR
A STUDY ON COMPASSION, BURNOUT AND SELF-CRITICISM IN MENTAL HEALTHCARE PROFESSIONALS

PARTICIPATE AND GET THE CHANCE TO WIN 1 OF 6 £25 AMAZON GIFT VOUCHERS!!

What is the study about?

Burnout is a growing problem among healthcare professionals, and it is a particular problem for mental healthcare professionals, however research is sparse. This study aims to further our understanding of burnout and self-criticism among mental healthcare professionals and explore the effectiveness of brief Compassionate Mind Training in reducing burnout.

What will I be asked to do?

You will be asked to complete some questionnaires and you will then have the option to try out a brief 2-week Compassionate Mind Training practices, taking approximately 20 minutes, that may help improve your psychological wellbeing. You will then complete the questionnaires again at the end of the 2 weeks and then once again 2 weeks later.

Can I participate?

Yes - If you self-identify as a mental healthcare professional who has been employed for at least 6 months with direct patient care experience and are over the age of 18 years. You can find out more information via the link below. You will also need to have internet access via either a smart phone, tablet or computer to access all aspects of the study.

How do I express my interest?

If you would like to find out more information about the study, please click on this link:

https://sotonpsychology.eu.qualtrics.com/jfe/form/SV_1yNLOgnkIkkncLX

Who is sponsoring the study?

This study is part of the Chief Investigator’s Doctorate in Clinical Psychology (DClinPsych) training programme at the University of Southampton.

Contacts

Chief Investigator: Emel Atuk [e.atuk@soton.ac.uk]
Main Supervisor: Dr Margo Ononaiye [m.s.ononaiye@soton.ac.uk]
Appendix Q  Online Debriefing Statement

**Study Title:** An Evaluation of the Impact of a Brief Compassionate Mind Training on Burnout and Self-Criticism in Mental Health Professionals.

**Researcher:** Emel Atuk  
**ERGO number:** 48071

Research has shown that self-compassion may be a resilience factor to burnout and reduce self-criticism in healthcare professionals, however research with mental healthcare professionals is limited. The aim of this research was to explore whether a brief online intervention aimed to increase the three flows of compassion (compassion to self, compassion to others and compassion from others) and in turn reduce burnout and self-criticism in mental healthcare professionals. We also collected data on depression, anxiety and stress as higher levels of these are also associated with burnout.

The data collected for this research is currently being analysed. It is expected that participants who reported lower levels of compassion (to self, to others and from others) at the start of the study also reported higher levels of burnout and self-criticism. It is expected that by the end of their participation, participants will experience an increase in their levels of compassion and report a decrease in burnout and self-criticism.

Unfortunately, we are not able to provide individual results, however, your data will help improve our current understanding of this area and improve the interventions aimed at reducing burnout and self-criticism among mental healthcare professionals. During the study you had the chance to tell us what your experiences of participating in the research was like, and we will take this into consideration for this and future studies.

This project did not use any deception. Once again, the results of this study will not include your name or any other identifying information.

You may print a copy of this summary if you wish and if you would like a summary of the final research findings once the project is completed, and did not state this on your initial consent statement, you can check the below.

Any discomfort resulting from the intervention or measures should be temporary, however, if you continue to feel any discomfort or are in distress and would like some support, you are able to contact the Samaritans, free at any time, from any phone on 116 123.

If you have any further questions, you can contact the Chief Investigator, Emel Atuk, via email on e.atuk@soton.ac.uk.

If you have questions about your rights as a participant in this research, or if you feel that you have been placed at risk, you may contact the University of Southampton Research Integrity and Governance Manager (023 8059 5058, rginfo@soton.ac.uk).

**Thank you for your participation in this research.**

If you did not have access to the intervention before, or would like access to it again, please click on the following link which will be active until 30th September, 2020:  

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

Please check this box to indicate that would like to receive the findings of this project.
Appendix R  Breakdown of daily ratings for intervention (Figure R1)

Figure R1. Mean ratings for how well participants were able to engage with the daily practices (1 = ‘not very well’, 5 = ‘very well’) for each day of the intervention. Standard errors are represented by the error bars attached to each column.
### Appendix S  
**Breakdown of feedback Likert-Scale Ratings (Table S1)**

**Table S1**

*Breakdown of Participant Responses to Likert-Scale Questions of Experiences of Intervention at Post-Intervention and at Follow-Up*

<table>
<thead>
<tr>
<th>Measures</th>
<th>Strongly Disagree n (%)</th>
<th>Mostly Disagree n (%)</th>
<th>Slightly Disagree n (%)</th>
<th>Neutral n (%)</th>
<th>Slightly Agree n (%)</th>
<th>Mostly Agree n (%)</th>
<th>Strongly Agree n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Post-intervention questions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychoeducational audio recording was helpful</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>1 (3.4%)</td>
<td>3 (10.3%)</td>
<td>5 (17.2%)</td>
<td>12 (41.4%)</td>
<td>7 (24.1%)</td>
</tr>
<tr>
<td>Found CMT practices accessible</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>3 (10.3%)</td>
<td>4 (13.8%)</td>
<td>9 (31%)</td>
<td>12 (41.4%)</td>
</tr>
<tr>
<td>CMT practices were feasible to do within timeframe given</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>1 (3.4%)</td>
<td>0 (0%)</td>
<td>8 (27.6%)</td>
<td>8 (27.6%)</td>
<td>11 (37.9%)</td>
</tr>
<tr>
<td>CMT practices were worth the time</td>
<td>0 (0%)</td>
<td>1 (3.4%)</td>
<td>0 (0%)</td>
<td>3 (10.3%)</td>
<td>4 (13.8%)</td>
<td>7 (24.1%)</td>
<td>13 (44.8%)</td>
</tr>
<tr>
<td>Length of audio recordings were too long</td>
<td>6 (20.7%)</td>
<td>3 (10.3%)</td>
<td>6 (20.7%)</td>
<td>4 (13.8%)</td>
<td>5 (17.2%)</td>
<td>1 (3.4%)</td>
<td>3 (10.3%)</td>
</tr>
<tr>
<td>Willing to continue practicing CMT practices frequently</td>
<td>1 (3.4%)</td>
<td>1 (3.4%)</td>
<td>1 (3.4%)</td>
<td>1 (3.4%)</td>
<td>8 (27.6%)</td>
<td>3 (10.3%)</td>
<td>13 (44.8%)</td>
</tr>
<tr>
<td>Would recommend CMT practices to colleagues</td>
<td>1 (3.4%)</td>
<td>0 (0%)</td>
<td>1 (3.4%)</td>
<td>1 (3.4%)</td>
<td>5 (17.2%)</td>
<td>9 (31%)</td>
<td>11 (37.9%)</td>
</tr>
<tr>
<td>CMT practices were unnecessarily complex</td>
<td>13 (44.8%)</td>
<td>5 (17.2%)</td>
<td>6 (20.7%)</td>
<td>1 (3.4%)</td>
<td>1 (3.4%)</td>
<td>1 (3.4%)</td>
<td>1 (3.4%)</td>
</tr>
<tr>
<td>Easy to adhere to instructions of the CMT practices</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>1 (3.4%)</td>
<td>7 (24.1%)</td>
<td>11 (37.9%)</td>
<td>9 (31%)</td>
</tr>
<tr>
<td>Was able to bring compassionate self to everyday life</td>
<td>0 (0%)</td>
<td>1 (3.4%)</td>
<td>1 (3.4%)</td>
<td>5 (17.2%)</td>
<td>12 (41.4%)</td>
<td>7 (24.1%)</td>
<td>2 (6.9%)</td>
</tr>
<tr>
<td>The CMT practices were helpful</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>1 (3.4%)</td>
<td>2 (6.9%)</td>
<td>8 (27.6%)</td>
<td>9 (31%)</td>
<td>8 (27.6%)</td>
</tr>
</tbody>
</table>

Follow-up questions

| Would have liked to have continued with the CMT practice | 0 (0%) | 0 (0%) | 4 (13.8%) | 6 (20.7%) | 3 (10.3%) | 7 (24.1%) | 6 (20.7%) |
| Would like to use the CMT practices in future | 0 (0%) | 0 (0%) | 0 (0%) | 2 (6.9%) | 6 (20.7%) | 10 (34.5) | 8 (27.6%) |
| Continue to feel benefits of the CMT practices | 0 (0%) | 2 (6.9%) | 4 (13.8%) | 3 (10.3%) | 8 (27.6%) | 7 (24.1%) | 2 (6.9%) |
Able to bring compassionate self into everyday life

<table>
<thead>
<tr>
<th></th>
<th>0 (0%)</th>
<th>3 (10.3%)</th>
<th>1 (3.4%)</th>
<th>2 (6.9%)</th>
<th>16 (55.2%)</th>
<th>4 (13.8%)</th>
<th>0 (0%)</th>
</tr>
</thead>
</table>

*Note. n = 28 completed likert-scale questions at post-intervention; n = 26 completed likert-scale questions at follow-up.*
List of References


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